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ABSTRACT

This is one of a series of 13 United Nations reports concerning population and its effects in East Asian, Middle and Southeast Asian, and Oceanic countries. Three seminars had been conducted to assist these countries in formulating development plans, taking into account demographic, social, and economic factors. Part I of this report is a summary of a seminar that dealt with the relation of population change to other factors such as family, housing, food, health, social mobility, education, labor force, social security, and transportation and communication. Part II contains 19 selected papers presented at the seminar on the above topics. (LS)

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ASIAN POPULATION STUDIES SERIES NO. 11

POPULATION ASPECTS OF SOCIAL DEVELOPMENT

REPORT OF A REGIONAL SEMINAR AND SELECTED PAPERS

UNITED NATIONS

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ASIAN POPULATION STUDIES SERIES NO. 11

REPORT AND SELECTED PAPERS: THE REGIONAL SEMINAR ON POPULATION ASPECTS OF SOCIAL DEVELOPMENT

(Held at Bangkok, Thailand, 11-20 January 1972)

ECONOMIC COMMISSION
FOR ASIA AND THE FAR EAST
Bangkok, Thailand

UNITED NATIONS

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CONTENTS

PART ONE: REPORT OF THE REGIONAL SEMINAR ON POPULATION ASPECTS OF SOCIAL DEVELOPMENT

Page

I. Introduction 1
II. Reports by countries and specialized agencies 2
III. Population change, conjugal status and the family 3
IV. Population change, households and housing development 4
V. Population change, food supply and nutrition 4
VI. Population change and health development 5
VII. Population change and social mobility 5
VIII. Population change and educational development 6
IX. Population change and developments in manpower, labour, force, employment and income .. 7
X. Population change, social dependency and social security 9
XI. Population change and transport and communications development 10
XII. The interrelations of population dynamics and social change 11
XIII. Problems of data and measurement in planning for social development 12
XIV. Conclusions and recommendations 12

Annexes

I. List of participants 18
II. List of documents 21

PART TWO: SELECTED PAPERS

1. Population aspects of social development 23
2. Population change, conjugal status and the family 57
3. Population, housing and housing development 66
4. Population change, households and housing development 70
5. Population change, food supply and nutrition 73
6. Population, food and nutrition in Asia and the Far East 75
7. Health aspects of family planning, with particular reference to social development 80
8. Population change and health development 82
9. Population change and social mobility 87
10. Population change and educational development 90
11. Population change and developments in manpower, labour force, employment and income 93
12. Population change and developments in manpower, labour force, employment and income 96
13. Family planning communication in social development 102
14. Population change and transport and communication development 104
15. The interrelations of population dynamics and social change 107
16. To make people count 114
17. Interrelation of population dynamics and social change 123
18. Some problems of data and measurement in planning for social development 127
19. Data requirements for unified development planning 134

Part One

REPORT OF THE REGIONAL SEMINAR ON POPULATION ASPECTS OF SOCIAL DEVELOPMENT

I. INTRODUCTION

1. The Regional Seminar on Population Aspects of Social Development was held at Bangkok, Thailand, from 11 to 20 January 1972, under the auspices of the Economic Commission for Asia and the Far East (ECAFE). It was the last of a series of three seminars organized to comply with the recommendations of the first Asian Population Conference that, in assisting countries of the region in the formulation of their development plans and their efforts to achieve them, account should be taken of the close interaction of demographic, social and economic factors.[1] The seminars had also been designed to make a substantial contribution to the background material for the second Asian Population Conference, to be held in Tokyo from 1 to 13 November 1972.

2. The first seminar in the series, which took place from 18 to 30 January 1971 at Bangkok, was organized jointly by ECAFE and the International Labour Organisation (ILO) and considered the "Interrelation between Population and Manpower Problems" in the context of development planning. Discussion reflected concern for the impact of population growth and composition on development of health, education, skill and population quality and stressed the need for continuing assessment of the interaction between population and manpower dynamics. The second seminar, "Ecological Implications of Rural and Urban Population Growth", was concerned with the impact of population growth, composition and distribution on natural resources, the rural-urban environment, and the quality of life, again in the context of development planning. Deliberations gave emphasis to the rural sector, which constitutes approximately 75 per cent of the total population.[2]

3. The objective of the third seminar was to make a contribution to more balanced development planning and to assist the response of countries to the urgent pressures of rising aspirations now building up among the inhabitants of the region. It was organized to examine specifically the interrelation of demographic variables and social factors, such as education, health, nutrition, social welfare and security, status of women, housing, and manpower utilization. The seminar afforded an opportunity for the exchange of information and experience at the national level, an appraisal of population trends and evolving social situations, and a determination of the kinds and measures of data needed to aid development programmes.

4. All three seminars gave special attention to problems arising from the interaction of demographic variables and social and economic factors envisaged for the Second United Nations Development Decade.

5. The seminar was attended by twenty-eight participants from eighteen member countries of ECAFE. Representatives of the United Nations specialized agencies and bodies also participated. Eleven experts from Australia, Hong Kong, India, Japan, Singapore and the United States contributed papers and served as consultants, discussion leaders and resource persons for the various sessions. The experts served in their personal capacity and not as representatives of their Governments. Members of the United Nations family also served as experts. The list of participants is given in annex I.

Documentation

6. The seminar considered one background paper and eighteen working papers and introductory statements prepared by the invited experts and the ECAFE secretariat. A representative of each participating country was also invited to make a brief statement. Documents considered are listed in annex II. According to rule 44 of ECAFE's Rules of Procedure, the working languages should have been English and French: it is regretted that the rule was not fully observed.

Opening of the seminar

7. U Nyun, Executive Secretary, ECAFE, officially opened the seminar and welcomed the participants on behalf of the Secretary-General of the United Nations and on his own behalf. The Executive Secretary spoke of

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[1] United Nations Economic Commission for Asia and the Far East, *Report of the Asian Population Conference and Selected Papers* (E/CN. 11/670) (United Nation Publication Sales No. : 65. II. F. 11).

[2] A report of each seminar will be published in 1972.

the rapid rate of population increase in most of the ECAFE region and its implications for development plans, which often failed to take into consideration the interaction of social development and population variables and thus fell far short of their goals.

Vote of thanks

8. A vote of thanks was expressed to ECAFE for sponsoring the seminar.

Election of officers and organization of the seminar

9. Mrs. Felisa R. Baretto (Philippines) was unanimously elected Chairman, and Mr. Vong Tang Seng (Khmer Republic) and Mr. K.D. Gangrade (India) were elected Vice-Chairmen. Miss Dorothy Z. Fernandez (Malaysia) was elected Rapporteur. In general, two items of the agenda were presented for discussion during each morning session. A working group on each topic then convened for more detailed consideration during the afternoon.

Agenda

10. The following agenda was adopted :

1. Introduction
2. Population change, conjugal status and family
3. Population change, households and housing development
4. Population change, food supply and nutrition
5. Population change and health development
6. Population change and educational development
7. Population change and social mobility
8. Population change and developments in manpower, labour force, employment and income
9. Population change, social dependency and social security
10. Population change and transport and communication development
11. Interrelation of population dynamics and social change
12. Problems of data and measurement in planning for social development

Adoption of the report

11. The report was adopted at the final full meeting of the seminar.

II. REPORTS BY COUNTRIES AND SPECIALIZED AGENCIES

12. Sixteen country reports, reviewing the socio-demographic situation in each country and pointing out special problem areas, were presented to the seminar. Representatives from the United Nations Development Programme (UNDP), the United Nations Food and Agriculture Organization (FAO), the Development Support Communication Service (DSCS), the World Health Organization (WHO), the International Labour Organization (ILO), and the United Nations Educational, Scientific and Cultural Organization (UNESCO) commented on the population-related activities of their respective agencies.

13. The country reports emphasized the importance of population trends for social development in the areas to be covered by the seminar, particularly the areas of manpower, education, housing and health. In most countries characterized by rapid population growth, it was acknowledged that this growth was hampering social development gains. It was emphasized repeatedly that, in spite of the demand for many categories of skilled labour, the explosive growth of the labour force was creating serious unemployment problems because most of the new labour force entrants were unskilled. The high dependency load of the school-age population as a proportion of the working-age population, combined with the rapid growth of the school-age group, was frequently noted as necessitating large educational investments merely to keep per capita services at a constant level and hinder efforts to improve enrolment ratios and upgrade the quality of instruction. Housing problems were recognized as particularly acute in urban areas due to a combination of rapid urban natural increase, rural-urban migration, and higher urban land and construction costs. With regard to changes in household and family structure, the city states of Hong Kong and Singapore reported rapid transition towards the nuclear family which was related to rapid economic development and modernization and the development of mass high-rise apartment residential living in government-sponsored public housing projects. In other countries, this transition towards the nuclear family was proceeding at a slower rate. Social security programmes did not affect the mass of the population in any of the region's represented countries except Japan, and some of the country reports suggested that rapid population growth and the high dependency ratios that accompany it hindered the development of mass social security programmes.

14. Some reports discussed the reverse effects of social development on demographic trends. In particular, it was noted that fertility trends were shaped by general socio-economic development as well as by family planning programmes and that population policy should be viewed, therefore, in a correspondingly broad framework of not only family planning but also economic and social programmes.

15. The country reports also contained a great deal of detail on the demographic situation in each country, but,

unfortunately, this material was too lengthy to permit inclusion in the present report.

III. POPULATION CHANGE, CONJUGAL STATUS AND THE FAMILY

16. The seminar observed that births, deaths and geographic movements of population occurred in social contexts dominated by marriage and family life. Parents and other relatives had the most influence over important decisions about reproduction. With respect to mortality, the family served many functions related to health, and mortality rates were lower for married persons than unmarried persons in the same age groups. Geographic mobility was also family-related. Family units often moved together. Individuals often moved either to join their family or to form new families in the area to which they moved. There were also important effects that birth, death and geographic mobility had on marital status and family structures. A high mortality situation for example, might preclude high prevalence levels for certain types of extended family unit. In short, the area of interaction between families and population change was very wide in scope and involved a two-way process: family structures influenced population change, and population changes influenced family structure.

17. The importance of understanding the interrelationships of population change, conjugal status and the family might be demonstrated in two ways: (a) by results from previous empirical studies, and (b) by specification of areas that might show strong interrelations if they were studied empirically.

18. Previous empirical studies had shown that: (i) in most countries undergoing modernization, there was a substantial negative association between fertility and the labour force participation of women, and the labour force participation of women was related to their marital status; (ii) there was a high positive association between age at first marriage for women and educational attainment, while a later age at first marriage was associated with lower cumulative fertility; (iii) different and changing family structures were associated with the transition from high mortality and fertility to low mortality and fertility; (iv) family type might be related to age at first marriage and the level of fertility; and (v) former patterns, in which the marriage partners and time of marriage were arranged, were changing, moving towards fewer arranged marriages. The direction and magnitude of the various results had differed for countries and time period.

19. The influence of older relatives on social life might increase as declines in mortality increased longevity. However, other aspects of social development might lessen the impact of that factor.

20. The seminar noted that it could not be assumed that the trends and interrelationships in Western countries would be repeated in Asian countries, nor could it be assumed that there would be uniformity in all Asian countries. Family types and the meaning of marriage varied among cultures and among subcultural groups within countries. In any one country, the interrelationships between population growth, social change, and economic advance or retrogression might be altered. The few empirical studies conducted to date indicated different interrelationships for different countries or time periods. The research base for policy and planning was thus noted to be deficient.

21. Critical variables needed to be specified. Age at first marriage might not be identical with age at first cohabitation. Which family members actually lived under the same roof might be less important than the economic interrelations and the types of social interaction that were prevalent. Information rather than speculations required studies within countries that included contrasts between cultural, social-economic and urban-rural groups over time.

22. The seminar observed that legislation and government budgetary allocations might be affected by additional knowledge of the interrelationships of population change, conjugal status and the family. Specific examples given were: (i) knowledge of the usual family structure of the income groups might facilitate the design of living quarters; (ii) knowledge of the relationship between the labour force participation of women and marital status might suggest social policies to facilitate the entrance of married women into the labour force; (iii) changes in old age and youth dependency associated with low mortality might require changes in social welfare policies and allocations; (iv) changes in divorce rates might affect household composition and the sex ratios among household heads; (v) changes in age at first marriage might affect demands for educational facilities and other social services or vice versa; (vi) in some countries, the increasing prevalence of older married women whose children left home might suggest retraining of women for labour force participation; and (vii) lower fertility might be accompanied by higher demands for high quality in the social services for children.

23. The seminar noted that a major problem in policy suggestions was the need for more research. Frequently there was inconsistency between policies that benefited the society as a whole and those that benefited individual families. Current research did not permit the specification of which functions of family units might be replaced by social programmes in order to attain desired social goals. There was also a need for the theoretical refinement of measures of family structures and conjugal status.

24. Consideration of further research areas should be

an aspect of social development planning, but social development programmes should not be slowed down because of the absence of research.

IV. POPULATION CHANGE, HOUSEHOLDS AND HOUSING DEVELOPMENT

25. The seminar expressed concern that, in the Asian part of the ECAFE region, a great part of the population was ill-housed. It was estimated that, in Asia and the Far East, 40 per cent of the urban population and 50 per cent of the rural population were living in insanitary and overcrowded quarters.

26. The basic factors determining housing need were considered to be: (a) demographic components, (b) doubling-up of families, (c) standard of housing, (d) depletion of housing stock, and (e) accumulated backlog of housing need. In the ECAFE region, the growth in the number of households over the next decade, which could be taken as an indicator of the growth of housing needs, was expected to be faster than the growth of population. The most important reason for this was that the working adult population of ages 25-64, for which household headship rates were high, was growing faster than the total population. A faster increase in that segment of the population than in the total population stemmed from age structure effects associated primarily with the expected moderate fertility declines.

27. There was a time lag before fertility decline significantly affected the number of entrants into the housing market. However, changes in fertility, mortality, marriage patterns and migration would have an immediate effect on the size distribution of households. That would call for changes in construction priorities relating to house and apartment size.

28. The second important aspect among the determinants of rapid growth of households referred to increases in most of the sex-age-specific headship rates.

29. That growth was attributable to increasing rural-urban migration and concomitant nuclearization of households, including the establishment of increasing numbers of one-person households in urban areas.

30. The interrelationship between income and household size was complex since changes in income affected the average household size through two different dimensions; one through fertility changes and the other through changes in headship rates. Increases in income sometimes led to increased fertility and expanding household size. Augmented income also increased the economic capacity to buy privacy, promoted the break up of doubled-up or extended families, increased the number of heads of household, and decreased the household size.

31. Housing shortage itself had substantial effects on the slowing down or postponement of household formation. In several countries during and after the Second World War, there had been a slowed incidence of household formation due to war-time housing shortage and other factors, followed by a postwar boom in household formation as housing construction picked up.

32. The seminar noted that the relation between housing and the level of fertility presented a complex area for study. In some situations, better housing and privacy facilitated the practice of family planning and the decline in fertility. In other situations, pressures such as those associated with crowding might be the facilitating factors in the acceptance of fertility planning.

V. POPULATION CHANGE, FOOD SUPPLY AND NUTRITION

33. The seminar was informed that morbidity was suspected to have gone up in the wake of declining death rates in the ECAFE region, but it was pointed out that that statement needed qualification. While the prevalence of certain diseases, such as tuberculosis, had decreased, the prevalence of some others had increased. It was noted that the general impression of rising morbidity could partly be due to the rising demand for medical services. It was also pointed out that the experience in the United Kingdom and the United States of America showed that a rise in morbidity among infants was associated with sharp declines in perinatal mortality.

34. A general question was raised regarding the measures that could be taken and the policies that should be adopted to prevent the deleterious effects of the use of modern techniques in agriculture on social and economic inequality. It was pointed out in answer that the policy measures for bringing that about, such as land reforms, were well known, but their implementation was slow; that it was really a problem of lack of political will to put them into practice. The need for an active social policy was emphasized in that connexion.

35. The problem of the interrelation between nutrition and population change attracted much attention. A question was raised about the association between nutrition and fecundity. An opinion was expressed that, within broad limits, there was no evidence to show that, in the case of human beings, there was any direct association between the two.

36. The seminar was informed that, in New Guinea, malnutrition was associated with increase in the age of menarche to 18 to 19 years. In Western countries, however, with rising standards of living and other related factors, the length of the reproductive span was being extended at both ends.

37. It was argued that, with improved nutrition, infant mortality rates declined and that, with greater awareness by parents of the increased probability of survival of children, parents might develop a desire for fewer children. In that context, it was pointed out that, owing to the time lag between the fall in infant mortality rates and parents' awareness of the increased survivorship of their children, it might be too late to take action to affect the number of children. Moreover, where better medical care was available and infant mortality had dropped, there still might be a tendency to have more children. It was also argued that, in areas where use of modern techniques had increased agricultural production, the demand for labour might have increased and therefore people might desire more children. It was pointed out that not much credence or significance, however, could be attached to such expressions, and there was general agreement that more research was needed to test those hypotheses.

38. The discussion on whether malnutrition in the early years of a child's life brought mental retardation of a permanent, as well as of a tempbrary nature, led to the conclusion that research carried out in that field was not yet complete. The seminar recognized, however, that the unfavourable effect of malnutrition on the mental and physical development of young children was certain.

39. In the same context, it was remarked that reduction in the practice of lactation was increasing the malnutrition of children. On the other hand, in some developing countries, the practice of prolonged lactation without supplementary feeding resulted in the malnutrition of both the mother and the child. The need to provide supplementary food intake in such situations should be given greater attention.

40. It was also pointed out that, since both calories and proteins were components of malnutrition, they should be considered together.

41. The seminar noted that, since food intake, deficiency diseases and physical growth were associated with the size of families, more research at the micro (family) level was necessary for policy formulation and planning.

VI. POPULATION CHANGE AND HEALTH DEVELOPMENT

42. In the introductory paper to this topic, two examples where change in mortality rates had been major factors in population increase were presented. In the first example, mortality decline had not been due initially to any deliberate health measures but to an increase in the standard of living. In the second example, over a short period of time, a rapid decline in mortality had been associated with the introduction of specific and potent health resources.

43. The seminar noted that, in time, health and family planning measures, by their effects on morbidity, mortality and fertility, could accelerate economic transition from low to high levels of production and consumption.

44. Uncontrolled fertility at a personal level might adversely affect the mental and emotional health of all members of the family, which would be reflected by their social aspirations and progress, and was a factor influencing social development.

45. The delivery of family planning services, through the use of existing health facilities that were ineffective in improving health and providing for the family, would probably also be ineffective in the regulation of reproduction.

46. The task of the health administrator was to provide a system that would ensure an integrated preventive and curative medical service that was supported by an efficient administration and struck a balance between effectiveness and economy.

47. Family health services should provide for the prevention, control and, in time, the elimination of major disease problems, especially in infancy and childhood, and for the prevention and treatment of common illnesses and accidents. The infrastructure of health services should be comprehensive, include family planning, and provide maximum coverage for the community. Health and family planning services should be mutually supporting.

48. Family planning might be introduced and developed as an integral part of the basic health services, taking due account of their accessibility, quality, continuity and efficiency, in association with: (a) maternal and child health services, (b) the control of communicable diseases, (c) environmental sanitation, (d) collection of data and maintenance of records, (e) health education services, (f) public health nursing, and (g) provision of curative medical care.

49. Family planning might also be introduced through welfare and other appropriate services.

VII. POPULATION CHANGE AND SOCIAL MOBILITY

50. The seminar noted that social mobility and population change were highly interrelated and affected each other in many ways, but that, as yet, the facts were not well documented. It was felt that there was an urgent need for research over time to clarify problems, establish benchmarks, and provide an understanding of social mobility at various stages of development. The complex nature of the interrelations between population change and social mobility, which made themselves felt after a time lag, emphasized the need for long-term research.

51. Social mobility meant the movement of persons from one position in the social order to another, from one class or socio-economic status to another. It was a mechanism that occurred in all societies. Through social mobility, the possibility of achieving personal goals existed. Whether that possibility was realized and whether it existed as a current issue in all nations were questioned.

52. It was recognized that there were the following major areas of importance in the analysis of social mobility: (a) amount of mobility, (b) career mobility within the individual's life experience, (c) mobility differences between generations, (d) social distance between statuses of origin and destination, (e) type of mobility such as that induced by industrial or demographic change (structural mobility) or that induced by the voluntary movement of individuals (circulation mobility).

53. In developing countries, some occupations were characteristically traditional and others were relatively modern. In view of that fact, the participants expressed the opinion that attention should be given to lateral social mobility between the traditional and modern sectors as well as vertical social mobility. Since the fertility behaviour in the two categories might be substantially different, it was felt that there was additional reason to study lateral mobility.

54. It was also noted that the most dynamic stage of the demographic transition would tend to coincide with the early and middle stages of development. Population expansion at those stages of development imposed considerable strain on the capacities of the society to allocate its resources and co-ordinate its manpower. That was one reason for the growth-at-all-cost strategy of many developing countries. A high rate of economic growth could help cope with the pressures of an expanding and under-employed work force, but development policies should also focus on effective manpower utilization and provision of specific pathways for social mobility.

55. In discussing the traditional barriers or facilitators of social mobility, mention was made of the existence, in a number of countries of the region, of the caste system as an impediment to social and occupational mobility. In other parts of the region, similar caste groups, ethnic minorities or linguistic groups were subject to social barriers or created social barriers. It was pointed out that, even in developed countries, certain lower socio-economic groups continued to have less access to certain social and educational facilities as well as to desirable jobs.

56. Trends were observed that the above situation was changing, although slowly, in both advanced and developing countries. An example was cited in south India, where members of the higher castes were willing to accept socially inferior occupations offering higher pay. This crossing of caste lines, however, did not necessarily result in social integration of castes and social development.

57. The view was expressed that lack of education was a major impediment to social mobility. For example, the great majority of the lower caste was landless and had few other resources and, therefore, were not able to obtain education adequate for generating upward social mobility.

58. The general view was that some traditional occupations, if suitably developed, could contribute to modernization, thus enhancing gradual and purposeful occupational mobility.

59. It was recognized that, in general and over the long run, small family size contributed to over-all mobility. However, at early stages of development, somewhat larger families could facilitate mobility because of their ability to mobilize group capital but that was predicated on an advantageous man to land ratio.

60. Modernization and development had a definite influence on the improvement of the status of women, who, in a number of countries of the region, assumed important and, in some instances, dominant roles in the economic as well as social life.

61. There was evidence that, in the developing countries of Asia, occupational mobility promoted nuclearization of the family system, but strong ties, in the economic as well as in the psychological sense, were usually maintained with the extended family.

62. It was noted that there were not sufficient reliable data in the ECAFE region pertaining to changes in fertility patterns caused by social mobility. More systematic research was therefore urged in that field. The suggestion was made that ECAFE could sponsor research on the fertility patterns of the labour force in the modern sector of the economy, as compared with the traditional rural sector, of the migrants and non-migrants within the urban sector, and of other special groups such as soldiers, refugees and persons in resettlement colonies.

VIII. POPULATION CHANGE AND EDUCATIONAL DEVELOPMENT

63. The seminar noted that the progress of education in the ECAFE region had been impressive over the previous two decades. Nevertheless, rapid population growth had impeded the spread of literacy and the improvement of enrolment ratios and pupil-teacher ratios. Although the adult literacy rate had improved between 1950 and 1970 in the high-fertility ECAFE

countries, the absolute number of illiterate adults had continued to grow. It was estimated that the growth of population in the primary school age group would require an increase of over 50 per cent in school facilities between 1965 and 1980 just to maintain enrolment ratios at their 1965 levels.

64. Because of the time lag between birth and school entrance, the short-run effects of fertility decline on school enrolments and teacher requirements were relatively small over the first ten years but increased rapidly thereafter. The long-run educational costs of postponement of fertility decline were very large. However, the long-run educational savings from fertility decline did not mean that total educational expenditure would level off, since those savings could be applied to upgrade the quality and extend the scope of educational facilities and services. For that reason, in countries where fertility had declined rapidly, educational expenditure had continued to rise.

65. Rapid population growth also produced high school age dependency burdens, which forced many students to drop out. The high drop-out rate was thus a common feature of ECAFE countries with rapidly growing populations. The percentage that the primary and secondary school age group (5-14) was of the working age group (15-64) was twice as high in the high-fertility ECAFE countries as it was in western Europe, so that the burden of a given level of educational expenditure *per capita* of ages 5 to 14 fell twice as heavily on the working-age population in the high-fertility ECAFE countries as in western Europe.

66. Because of the required expansion of educational facilities and personnel under rapid population growth, non-recurring educational expenditure was a large proportion of total educational expenditure and impeded efforts to upgrade the quality of existing facilities and services.

67. Educational development, as well as being affected by population change, had reciprocal effects on fertility, but it was noted that those effects did not appear to be very large on the national level unless educational development was accompanied by economic development and a corresponding transformation of the occupational structure. In that regard, it was noted that more study of the kinds of education most effective in simultaneously reducing fertility and maximizing socio-economic development was needed. The case of the Philippines was mentioned, where, in spite of high educational levels, fertility was extremely high. The importance of female educational levels for fertility behaviour was also mentioned, and it was noted that female enrolment ratios had lagged behind male enrolment ratios in the region. Some participants stressed the importance of tailoring educational development to the needs of economic development, while others stressed that the broader importance of education as a means of developing the full human potential of the individual, not just his economic potential, must not be lost sight of.

68. The question of the impact of rapid population growth on educational standards was brought up, and it was pointed out that, although enrolment ratios had kept up with or surpassed population growth in most countries, in some countries it had been at the cost of declining standards.

69. The participants discussed, at some length, the uses of mass media in education. It was reported that, in India, mass media had been widely used to spread the idea that a desirable family size was two or three children, but that the impact of those media campaigns on fertility itself was less certain and difficult to measure. It was reported that, in Nepal, the low levels of adult literacy blunted the effectiveness of such media campaigns. Some participants stressed the importance of expanding adult education programmes, whereas others noted that, in some countries, notably Malaysia, adult education programmes had not been very successful, partly because of insufficient demand by parents for such services.

70. Introduction of population education in schools of some countries was noted, but it was pointed out the any short-run effect on fertility could not be expected.

IX. POPULATION CHANGE AND DEVELOPMENTS IN MANPOWER, LABOUR FORCE, EMPLOYMENT AND INCOME

71. The seminar observed that, with a projected growth of population in the ECAFE region from about 2,000 million in 1970 to 2,500 million in 1980 and to 3,700 million in the year 2000, there was likely to be a demand for 1,000 million jobs by the end of the century. About 75 per cent of the population lived in rural areas, but, even with an estimated decrease in that proportion, the numbers would increase by about 286 million by 1980.

72. Although the ECAFE region was characterized by an abundant labour force, with much unemployment and underemployment, there was an insufficiency of certain kinds of labour needed for economic development.

73. Certain conditions, such as geographic distribution, problems of malnutrition, and bad health, might be cited as affecting the availability of labour. They related to productivity as well. Moreover, the level and content of education and of skills were important factors in the availability of labour. Attitudes toward work, the "work ethic", were not always compatible with the requirements of modern industrialization. Choice of occupation was sometimes governed by ethnic group affiliation that might introduce rigidities into the oc-

cupational and industrial structure and thus retard development. The widespread prevalence of such work as street-hawking, which did not contribute to economic development of the nation or sufficient income to the worker, was often a problem. Effective utilization of labour was related to cultural transformation, and incentives to facilitate and direct the process as it related to employment needed to be included in programmes, with particular reference to the traditional sector. Suitability to the culture, ideology and the economic system had also to be taken into account.

74. Ways to increase work motivation might involve improvement of health and nutrition. Increase in the variety and characteristics of consumer goods could also be a contributing factor. A social consciousness might be encouraged during childhood that would widen the concept of purposes of work.

75. Conflicts of interest arising from the heterogeneity of people within countries was becoming more evident. The demands of minority groups for equality in job opportunities that affected labour utilization required attention.

76. It was noted that the extent of resource allocation for various levels of education might be examined. In some instances, it seemed that allocations to higher educational levels were too great and training for intermediate levels was relatively neglected in proportion to the needs of the country. That added to causes for under-utilization of labour, and the effect might be manifested in social and political unrest. The need for balance in providing educational facilities appropriate to levels of development and to plans was emphasized.

77. Some guides to appropriate levels of education and labour force occupational and industrial structure were available in the work of the United Nations Research Institute for Social Development (UNRISD), especially in their publications dealing with "correspondence points" relating various social and other variables to economic development.

78. Labour demands would be stimulated according to the kinds of industries that were developed. At the outset of development, it was well to choose labour-intensive industries. While capital-intensive industries might be chosen to contribute to national income, labour-intensive industries were needed to absorb the unemployed and underemployed. A suitable mix had to be found. A slow-down in population growth could greatly simplify transfer of the labour force from the traditional to the modern sector as it would decrease capital inputs necessary to bring about that transition.

79. It was suggested that a common market for Asian countries would contribute to a better balance in industrial development and demand for labour. The developed countries could help by adjusting their trade policies, increasing capital inputs in developing countries, and undertaking joint enterprises and manpower missions.

80. The difference in female age-specific labour force participation patterns between more and less developed countries was noted. In the more developed nations, there was a decrease in age participation rates of women after age 22, with an increase beginning at about age 35 and reaching a high rate at ages 40 to 50. In the less developed countries, there was a gradual uninterrupted trend of decline. The evidence that entrance of women into the labour force decreased fertility was as yet inconclusive. Where entrance of women into the labour force caused a delay in marriage, fertility might be lowered. There was a need for more data concerning the relationship of fertility and female participation in the labour force as well as on the influence on fertility of social security benefits.

81. Policies on urbanization as they affected manpower utilization were considered. While urbanization in the developed countries accompanied growth in productivity, in the developing countries it had proceeded without an adequate economic base. Urban growth had been intensified by the influx of refugees, by rapid mortality decline and continued high fertility, and by push from the rural areas without genuine urban economic pull. Extreme concentration in the largest cities was a serious problem and distribution of city size was much distorted. There was a need for balance in urban-rural development. Policies based on assessment of requirements for centralization and decentralization, including development of growth poles, should be considered in connexion with regional planning and urban planning to help cope with excess concentrations of population. In that connexion, UNRISD's work on problems of urbanization was also relevant.

82. Government improvement of rural conditions and the provision of employment opportunities, particularly where there was a seasonal agricultural pattern, would be useful. The development of tourism could be used to bolster handicraft production and to aid rural employment.

83. The relationship of population growth and income distribution was noted. Rapid population growth based on high fertility produced a high youth dependency ratio which, *ceteris paribus*, operated to reduce income *per capita*. A decrease in fertility facilitated gains in *per capita* income by reduction in child dependency. Migration could also contribute to equalization of income. Achievement of more equitable income distribution would generate more consumer demand and therefore more job opportunities. Special training for an approved

entrepreneurship was one way by which Governments could assist in improving income distribution.

84. Recommendations for research and measurement of the work force should start with recognition of the inadequacy of the present labour force concept in developing countries. While it might have been applicable in the industrialized countries where it was formulated, its simple application might obscure important aspects of the under-utilization of labour. New conceptual frameworks and analytical procedures were being developed for experimentation in several countries. The scheme developed by the Organization of Demographic Associates (ODA) was under study by the Committee on Asian Manpower Studies (CAMS). That scheme should make it possible to measure unemployment, part-time unemployment, and various forms of underemployment.[3]

85. Since changes in the labour force in the following 25 years would be predominantly a function of the population growth rate rather than changes in labour force participation rates, closer measurement of fertility and mortality and population growth rate was an urgent need. The "dual approach" was recommended where registration data were in inadequate, i.e. matching census results or surveys with results of independent sample registration systems.

86. The quality of census data could be improved by including in the operation a pre-test and a post-enumeration survey to evaluate completeness and response error.

X. POPULATION CHANGE, SOCIAL DEPENDENCY AND SOCIAL SECURITY

87. The seminar recognized that, in most countries of the ECAFE region, consideration of the household economy was essential in understanding the process of economic growth and social and fertility change. With increasing industrialization and urbanization, extended families, which constituted an in-built system of social security to individuals, were decreasing, giving rise to nuclear families. As a result, it became increasingly necessary for countries to introduce modern social security programmes to provide protection against various contingencies of loss of income and support that were faced by individuals. It was argued that, in developing countries, children were considered sources of old-age security for parents. With the emerging pattern of nuclear families, children might cease to be a source of security for parents in their old age and invalidity, and some form of security would be required to encourage a small family norm.

88. In the developing countries, the greatest sense of economic security was provided by the ownership of land and the extent of landholding. During the process of economic development in the ECAFE region, the dependence on land was gradually being reduced and the occupational structure was becoming diversified, giving rise to an increasing labour force in the secondary and tertiary sectors. That again meant that a new form of social security had to emerge to replace the traditional form of social security offered by land. It was also necessary to anticipate the growing proletarianization of labour resulting from progress in agricultural organization in those countries. The changes in the relationship of production would inevitably bring about changes in family structure which, in turn, would lead to a different pattern of social dependence. The institutional factors, such as the system of land tenure and the distribution of landholdings, were equally relevant for influencing family planning.

89. Economic growth without social security would bring about serious problems of social development. Social security was an essential ingredient in the process of modernization. It could therefore be expected to influence fertility favourably.

90. Social security programmes referred to those schemes or services set up on a statutory basis to provide benefits, either in cash or kind, in respect of certain specific contingencies, such as morbid condition, unemployment, old age, employment injury, invalidity, death of the bread-winner, and family responsibilities. Their objective was to provide income security, to bring about income redistribution, to improve social welfare and to ensure social justice.

91. Changes in population, in its size and structure resulting from changes in mortality and fertility, would have their impact on social security programmes; and those programmes would, in turn, influence mortality and fertility and affect future population changes. The magnitude and cost of social security programmes of various types depended upon such factors as the absolute size of population, age structure, population in the working age group, labour force participation rates, retirement age, invalidity rates, age at widowhood, and size of family.

92. It was necessary to distinguish between social security as a social development measure and social security as a factor influencing fertility behaviour. It was argued by some that measures such as maternity benefit could result in promoting fertility and that there was no empirical evidence to indicate that old-age pension schemes helped in reducing fertility. However, it was reported that, in the Khmer Republic and the Republic of Viet-Nam, there was no evidence that mater-

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[3] Details of the breakdown of these variables are given in "Population change and developments in manpower, labour force, employment and income" in part II of this report.

nity benefits and family allowances did in fact lead to higher fertility.

93. Although the information on the impact of social security programmes on fertility in the countries of the region was scanty, it seemed that social security programmes, such as maternity benefits and family allowances, did not act as inducements to fertility increase. The conclusion was based on the consideration that the benefits received under those schemes were often only a very small proportion of the cost of bringing up children. There was general agreement that, in the Asian context, one of the strong inducements to small family size would be the provision of a minimum level of social security, and, in particular, the provision of old-age and invalidity benefits, which would gradually transfer some of the familial functions of security and support to society.

94. In the existing situation, the social security schemes in Asia mostly benefited the government servants and salaried employees and wage-earners in the organized industrial sector, who were already a favoured group. The large majority of the population in rural areas did not have any social security. In that context, a favourable view was taken of a proposal for exploring the feasibility of developing rural-based social security programmes within the institutional framework of co-operatives, local development agencies, and community development organizations, with financial resources mobilized from the Government, landowners and agriculture workers. Obviously, such a rural-based social security system could not operate on conventional techniques of social security designed for the industrial workers. The objectives of such a scheme could be to ensure for the rural population: (a) gainful employment, (b) a minimum level of living, and (c) social security. In that context, it was noted that, in Indonesia, the mutual aid societies were encouraged by the Government, although those societies were not yet providing any significant social security. Similarly, in Japan, the existing farmers' mutual benefit organizations carried out the functions of mutual savings and pooling and distribution of resources for their members. It was also noted that, in Iran, there was an ILO-aided pilot project of social security for farmers organized within the framework of agricultural co-operative societies.

95. Consideration was given to the need for innovations in terms of a combination of both conventional and non-conventional forms of social security, principally in the rural areas. It was felt that viable programmes and methods of social security for the rural population could be evolved only on the basis of well thought out studies and research carried out in individual countries, particularly on the institutional and financial aspects of such programmes.

96. It was also recognized that there was a need to make greater use of the existing institutional and personnel resources (hospitals, dispensaries, and medical and paramedical personnel) available under social security programmes for the promotion of family planning.

XI. POPULATION CHANGE AND TRANSPORT AND COMMUNICATIONS DEVELOPMENT

Transport

97. The seminar noted that transport demand was a derived demand that depended mainly on the level of economic activity. Generally, with rapidly growing population, the transport system had to expand faster than either population or total output because of the rapidly growing importance of goods transport at the early stages of development. The influence of rapid population growth on transport development was felt primarily through a scarcity of resources available for transport development owing to competing investment demands in other areas.

98. A characteristic of many transport facilities was that they might, to a large extent, determine the diffusion of population and activities for decades. Transport planning should thus take into account long-term objectives of population distribution as they related to social and economic development.

99. In the ECAFE region, the high and rapidly increasing density of population in relation to land and other natural resources might require future transport systems which were different from those typical of the industrialized countries with their heavy reliance on private automobiles.

100. Transport development might have significant effects on fertility by facilitating communication and diffusion of improved levels of living and new ideas into remote areas.

Communications

101. The different components of a country's communications system were related to its rate of population growth in different ways. For example, radio and television broadcasting were relatively less affected by the rate of population growth. In that case, in fact, certain economies might be realized by increased population densities, given that a larger population could be served at the same cost. On the other hand, in the case of the telephone network, for which a good deal of investment went into the linkage of individual households and businesses into the network, investments depended more directly on population growth. The main effects of rapid population growth on communications development appeared to be the restriction of investment funds

because of: (a) low savings rates and high competing investment demands in other areas; and (b) the slowed growth in *per capita* income which, in turn, slowed growth in ownership of radio and telvision receivers.

102. Most developing countries in Asia had not made the best use of communications media for the purpose of social development and family planning programmes. Part of the problem was that communications workers were often too specialized in the area of communications itself. The roles of communications worker and development worker should be combined whenever possible. In the area of family planning communication, the importance of interpersonal human communication and the secondary supporting role of audio-visual and other communications aids were stressed. It was mentioned that the transport system itself could be an important factor in facilitating communication.

XII. THE INTERRELATIONS OF POPULATION DYNAMICS AND SOCIAL CHANGE

103. The seminar focused on the interrelation between changes in population and social development. At the very outset, it was recognized that the subject of the session was very broad.

104. There was an initial discussion of the psychological bases of population and social change. People behaved as they did to survive. Patterns of behaviour, according to changes in environment, were established in time. They became culture, custom and tradition. The people sometimes adapted slowly to changes. The task was to reinforce behavioural changes. Factors that had made people experience difficulties in adapting to changes were (a) extent to which people were actually aware of the change (perception of change and concomitant problems), and (b) presence of outside help that might discourage people from finding solutions to their problems. One way to overcome that might be to restructure people's perception by propaganda, advertising and other techniques of communication. Another step could be to identify areas where people were changing their behaviour and reinforce the behaviour change while avoiding the negative factors.

105. Population dynamics included natural increase and migration, growth, and distribution. Social change was an even broader concept. However, the critical question in both the near and distant future in most of the ECAFE region was demographic transition, and the basic question in demographic transition was the course of fertility.

106. The fertility of a population was related to social organization, social norms, religious beliefs, economic goals, technological levels, and many other factors. Such social and cultural factors as early marriage, an aversion to spinsterhood, or a strong desire for a male child might stimulate fertility. Other factors that might contribute to fertility reduction included celibacy and abstinence, remarriage of widows, prolonged lactation, absence of spouses, divorce, and birth control.

107. What changes now operative or emergent contributed to transitions in marriage, family and fertility? Could stimulated social changes contribute to speedier modernization at earlier stages of economic growth? If so, what were the changes? Would the economic difficulties of the decades of rapidly increasing manpower and severe difficulties in employment perpetuate the traditionalism that sustained high fertility? Those and similar question were easy to state but difficult to answer.

108. A major gap in population research lay in the area of social impacts and interrelations. Given the dimensions of the Asian population growth and the limitations to the time available for resolution, that research that was so sparse might be the type most needed if there were to be new approaches to the policies and programmes of Governments.

109. That approach to demographic transitions as a social process might seem odd to those who assumed that the future transitions among Asian cultures and peoples would be repetitions of those among European peoples in past periods. There were transitions in Asia today-far swifter than those that came earlier among European peoples. Transition was completed in Japan. The population of China was probably in transition. There was transition in the Ryukyus and in the Republic of Korea. The area of change extended beyond that core area to Hong Kong, Singapore, Malaysia and Ceylon. However, the great problems in most of Asia were the achievement of the economic and social growth that would be the precursor of demographic modernization. The high rates of population growth slowed the economic and social changes whose consequences would be declining fertility and slowing growth.

110. There were ongoing transformations in Asia. Change, already pervasive, was diffusing. Declining death rates and increasing rates of growth altered all other demographic, economic and social changes. Family planning programmes were social changes that stimulated further social changes in marriage, family, the roles of the sexes and the generations, and fertility. The increasing productivity in agriculture proceeded through the penetration of the money economy, the extension of the range of contacts, altered land ownership mechanization, changed manpower requirements, and pressures against the continuity of the social order and of the political structure. Migrations and mobilities were stimulants to social change and conditioned by it. There were altered transportation, communication and contact facilities. Transistor radios permitted paths of

change that leapt beyond roads and literacy. There were relations, still imprecisely measured, between changing education and changes in life roles, mobilities and fertility. Finally, there were critical interrelations between population, social change and political processes.

XIII. PROBLEMS OF DATA AND MEASUREMENT IN PLANNING FOR SOCIAL DEVELOPMENT

111. The seminar observed that social development took place in a specific context, the limits of which were set by the availability of resources, the trends of social and economic change, the formulated policy goals, and the capacity for implementation.

112. Planning within a national context should focus on the total national social system, which included psychological, sociological, cultural, political and administrative factors. It should also take into account the emerging environmental problems. That approach could facilitate unified development planning.

113. Traditionally, social development planning had been seen as competing with economic development planning, and many arguments had been raised about resource allocations, e.g. between the building of factories or the building of schools and hospitals, where the ultimate rationale was cost-benefit considerations. How much would better schools contribute to GNP? How could that be measured? The concept of planning for two separate and mutually competing infrastructures, one economic and the other social, was fallacious, however, if viewed against the real purposes of unified development, which aimed at an increase in the opportunities of all people for a better life. The goal of development was people, not the economy or the building of schools *per se*.

114. Social development aiming at modernization should therefore not only be seen as a sector of development that competed for scarce resources. Social development also meant the creation of developmentally oriented, modern people who experienced a degree of mastery over their social, economic and physical circumstances. That essential view of social development meant therefore the engineering of new attitudes and structures, which might already have to be induced in infants and pre-school children in order to create modern-minded people in the generations to come. That idea contained in itself the notion that social development planning was a long-range endeavour that took the future human resources and the future social structure of a society as its goal. Implementation of that sort of social development was not necessarily expensive but relied heavily on extensive information and intensive propaganda programmes to influence basic attitudes and practices. The same effort of extension that was behind, for example, fertilizer recommendations, should also back up those programmes that aimed at the "informal" and functional education of the young and the adult population.

115. It was recognized, however, that the competition of planning for economic development might be fierce because the economy was more immediately visible, promised more immediate returns, and would therefore, for political reasons, often be more attractive.

116. Planning for social development would necessitate consideration of a multitude of data that were politically as well as socio-culturally specific. It was only by taking a comprehensive view of society that problems could be solved in their interrelatedness. That called for adequate social analysis and diagnosis which identified the most significant variables in the system and clearly stated the basis and the feasibilities of plan implementation. Data should therefore be gathered at the micro- and the macro-levels of society, and new data would have to be developed. The traditional approach by standard sets of internationally available "plan indicators" had to be rejected therefore as being irrelevant. Relevant and functional data required the close co-ordination of government, public and private agencies; the national, regional and project planning bodies; the statistical office; and the research efforts of universities, agencies and private scholars.

XIV. CONCLUSIONS AND RECOMMENDATIONS

117. In recent years, many countries in the ECAFE region had made significant progress in dealing with population increases and had made important advances in social and economic development. Nevertheless, there were still urgent needs in most countries of the region to reduce the rate of population growth to improve social and economic welfare. In that respect, Governments with problems of rapid population growth should give high priority to examining :

1. Their policies on population (including family planning policies) to see whether they met the national needs;
2. The existing government machinery for co-ordinating and implementing population policies, including family planning;
3. The existing provision of family planning advice and aid, and, in particular, the effective coverage of the country as a whole to ensure that those services were fully available as inexpensively and as quickly as possible; and,
4. The existing methods of making known to all the population both the Governments' population policies and the availability of family planning services.

118. The main emphasis in forward planning in family planning programmes had to be on the full provision of services that were also well publicized. Within that context, there was a need for further research into the interrelation of population dynamics and social change. Such research should be country-based because national research priorities and national situations varied.

119. In considering recommendations for research made by the seminar, Governments might want to evaluate in each national situation :

1. The likelihood of producing research results useful for government decision-making;
2. The amount of time needed to obtain useful results from research; and,
3. The costs in term of finances and other national resources (e.g. trained manpower) relative to the benefits of the new knowledge to be gained.

120. With respect to research, it was difficult to extend analysis to the complicated interrelations of population dynamics with social structure and social change. Given the severity of the economic-demographic relations in countries where the level of living was low, pressures severe, and resources limited, the questions of social change that stimulated population change might assume paramount importance.

121. Research on the interrelations of population dynamics and social change might aid in the search for speedy, effective and feasible strategies for population policies and social and economic development. The United Nations organizations should assume some initiative in formulating and facilitating work in the ECAFE countries. Further, ECAFE and the United Nations specialized agencies concerned with social development or population dynamics should facilitate the design of research and experiments to test the present or possible interrelations of their programmes with changes in marriage, the family and fertility.

122. In formulating and facilitating research, ECAFE, in collaboration with the United Nations agencies concerned, might wish to consider that :

1. The integration of the study of migration and urbanization, in the context of contemporary population dynamics and social change, was essential to planning and policy formulation;
2. Since past and ongoing transitions in the ECAFE region were relevant to future transitions within the region, incisive analyses within countries of low or declining fertility and comparative analyses among such countries deserved major research efforts;
3. The strategies for planned demographic and social change derived more from the analyses of areas of transition than from those of traditionalism, and a concentration of studies in areas and among groups where fertility was declining could yield hypotheses for intensive probing and tentative guides to experimental activities;
4. Since the prevalence of marriage and the age at which marriage occurred were crucial factors in traditional, modernizing and modern fertility, the analyses of age at marriage and the fertility of the married were interrelated rather than separable projects;
5. For the guidance of planned changes, hypotheses might be developed and tested in the study of changes in the roles of women, the relations of the generations, and the aspirations of parents and kin for children;
6. The persistent assumption of a dichotomy between the activities of government in population fields and the impact of social and economic changes in fertility was analytically and operationally suspect, so that analyses of the interrelations to determine the most effective combinations of plans and programmes might be significant.

123. The preceding statements provided a frame for some of the recommendations approved at the seminar. The recommendations were classified broadly into those dealing primarily with (a) policy, (b) implementation, and (c) research. The classification was necessarily somewhat arbitrary, for some proposals involved two or more of those three types. Moreover, research results might affect policies, policies might affect research to be conducted, and implementation might depend on either policy or research results.

Recommendations

124. All the recommendations presented below have particular significance for countries engaged in formulating development programmes. In addition, they have international significance and are submitted for consideration by the second Asian Population Conference and the Executive Secretary of ECAFE in the development of The Asian Population Programme.

A. Policy and programming

125. Governments should experiment with educational innovations to maintain or increase enrolment as a stimulant to population and social change. Alternative planning goals and strategies should be worked out by each Government. The experience of other countries within and outside the ECAFE region might serve as a model.

126. In order to minimize the possibility of deleterious effects of the new agricultural technologies and associated

changes on the social and economic conditions of the underprivileged sections of the population, active social policies should be adopted and relevant measures should be implemented without further delay.

127. Since brief or overlong lactation is related to infant and maternal nutrition, infant morbidity and mortality, and the frequency of conception, supplementation of the food intakes of mothers and children, including suitable weaning foods, should be encouraged by governments.

128. As it is recognized that legislation has had little direct influence on personal reproductive behaviour, the merits of legislative rewards and punishments for practice or non-practice of family planning should only be determined by individual countries in the perspective of national priorities and in the context of local values and customs. However, where national policies exist to restrain population growth, such policies can be promoted by the repeal of relevant existing restrictive laws. Particular consideration should be given to the education and employment of females and to the outcome of pregnancies resulting from contraceptive failure.

129. As it is recognized that the gain from health development could be sustained by slower growth of the population, the introduction of highly effective health measures should be accompanied by the introduction of programmes for the control of population.

130. Since it is recognized that population growth and the demand created by social development will increase the load placed on the health services, and that the demand is unlikely to be met merely by increasing the number of health personnel trained according to existing patterns, a radical change in approach to the training of health workers is required if sufficient numbers are to be appropriately prepared.

131. ECAFE countries should, in their efforts to increase the availability and more effective utilization of labour, attempt to improve the regional distribution of the work force to enhance the productivity of labour by improved health, nutrition, education and training; to stimulate positive attitudes toward work and the selection of strategic occupations; and to eliminate rigidities in the occupational structure that may be based on population or cultural diversity.

132. To stimulate the more effective utilization of labour, ECAFE countries should move to effect better co-ordination between education and training and the demand schedule for labour.

133. ECAFE countries should recognize that a decrease in the birth rate and population growth rate would make it easier in the long run to absorb the increase in the labour supply in the modern sector of the economy and require fewer inputs for modernization and the absorption of labour.

134. To promote more effective utilization of labour, ECAFE countries should consider possible "common market" developments that would make possible more efficient use of labour and other productive resources in accordance with advantages in comparative cost in their own countries.

135. Economically advanced countries should increasingly strive to help the developing nations by means of adjustment of trade policy; increased capital input, public and private; greater participation in joint enterprises; and increased assistance in manpower evaluation and training.

136. Countries in the ECAFE region should consider the promotion of more effective use of females in the work force and be aware of the extent to which increased female labour force participation may decrease fertility; further research is needed on the relationship between female labour force participation and fertility.

137. In formulating employment policies, Governments should consider the regional and urban-rural distribution of the work force and examine the desirability of effecting greater decentralization of population through the development of new growth centres.

138. Special attention should be directed to the creation of job opportunities in rural areas to fill seasonal gaps in employment.

139. Countries should attempt to provide cultural, educational, health and recreational opportunities in rural areas, in addition to employment opportunities, with a view to reducing diseconomic migration from rural to urban areas.

140. ECAFE nations should recognize that high fertility results in a high dependency ratio, which, other things being equal, results in decreased income *per capita*.

141. Countries should strive to achieve a more equitable distribution of income even while working for increased economic growth and to make the task of absorbing the impending great increase in labour supply easier.

B. Implementation

142. Countries in the ECAFE region should consider experimenting with more innovative approaches to the communication of social planning information, recognizing that the mass media serve some functions while interpersonal communications serve other functions. Experimentation with innovative communication strategies should be coupled with innovative approaches to the distribution of the materials and supplies needed in social development programmes. This recommendation refers to such social development plans as those related to family welfare and fertility control, housing, and social security measures. The innovative approach should

embody fully co-ordinated national efforts. Governments are invited to ensure that the national approach to population policy and family planning is fully co-ordinated.

143. In view of the importance of research in securing data for social development planning, an attempt should be made to bridge the existing gaps between research scholars and social planners. ECAFE might seek advice on research needs from Governments or other bodies concerned with social planning and make their research priorities known to scholars and research institutions. There is also a need for administrative instruments, such as advisory committees, to communicate the results of research to planners and other groups in Government.

144. It was recommended that a regional working group, consisting of representatives of ECAFE, the ILO, FAO and other interested international organizations, should be organized to formulate specific proposals and guidelines for Governments on ways of integrating family planning programmes with a minimum programme of social security in the rural areas of the countries of the region. The group should also include government officials, social scientists and other experts with first-hand experience of social security programmes, rural development programmes and family planning programmes in the region and should:

(1) Examine the different traditional and modern forms of social dependency and social security prevailing in the countries of the region; take note of the progress already made in rural development, social security and land reform in these countries in recent years; and recommend measures that will initiate or intensify the work of incorporating family planning and social security in rural areas into the process of national social development as an essential element; and

(2) Seek the collaboration of the specialized agencies concerned and other international bodies and non-governmental organizations as well as United Nations-based trust funds, such as the United Nations Fund for Population Activities, in the financing of the proposed working group as well as the studies required to facilitate the formulation of viable social security progammes.

145. The collection of statistical and descriptive data should be closely related to planning goals. Social planners should try to provide data collection agencies, such as national statistical offices, with precise data requirements. In some cases, an integrated data collection system might prove advantageous.

146. Since the health manpower deficiency that demands attention is not the lack of high-grade medical or family planning specialists but the growing need for primary health workers and integrated health teams who can meet the everyday needs of rural communities, medical education should be reoriented, with the accent on preventive care in the community and primary medical care being given by auxiliary health personnel.

147. In view of the fact that, generally, in the countries of the ECAFE region, inadequate funds are allocated for the development of social services, including health and family planning services, more national funds should be provided for the development of health and family planning services, since they represent an investment the economic return for which is the increased productivity of a healthy, well-nourished community.

148. Given the need for complete coverage of a community with family planning, and for male and female sterilization and induced abortion, where acceptable, to be provided as part of the family planning services, coverage could be improved by integrating family planning into existing health services where these are well developed; elsewhere, it is necessary to develop basic health care, including family planning, by providing a comprehensive infrastructure of basic health workers.

149. Since all channels, not only the health services, should be used to convey family planning information, advice and services to the people (industrial and agricultural welfare associations, commercial outlets, including the direct sale of contraceptives to the public, and indigenous "medical" talent, for example), the aim should be to inform as much as to provide services. Information should reinforce local customs and practices that promote fertility control. Care should be taken to remove rather than create barriers between the services provided and the people seeking family planning (for example, obligatory vaginal examination or cytological examination of the cervix should be approached with great caution).

150. Although the need for control of any sort by the Government or the medical profession over the distribution of accepted contraceptive methods whose efficacy and hazards to the public are known, it is recognized that there are likely to be problems in the future in the control and administration of new drugs affecting human fertility. It is therefore necessary for Governments to ensure that the public health is protected by adequate controls and by applying internationally accepted standards in the production of contraceptives.

151. Since present family planning clinic approaches seem to have reached a plateau in the number of acceptors in several countries, it is recommended that experiments be conducted in more integrated approaches to fertility control in which the family planning clinic is integrated successively with maternal and child health centres, comprehensive health programmes,

general family counselling services, broad educational programmes, and general social and economic development programmes. Various combinations of these elements should be experimented with in order to test the hypothesis that the broader the approach the more likely is family planning to be accepted. Such an approach would necessarily involve the utilization of multidisciplinary social science, social work, family counselling and other personnel, as well as medical and paramedical personnel, in efforts to reduce fertility.

C. Research

152. It is recommended that research be stimulated and undertaken to evaluate the censuses in the ECAFE region, with a view to evaluating the impact of family planning programmes during the past decade. Such research will necessarily involve evaluation of census enumeration and the determination of growth rates as a basis for analysing changes in fertility.

153. Countries in the ECAFE region should place greater emphasis on "action research" in which the application of specific social development policies is evaluated in the light of their effects on population change. As a consequence of these recommendations, innovative social development measures should make sufficient budgetary provision for research on the effects of the social development programme on population change and on the effects of concurrent population changes on each specific social development plan.

154. Countries in the ECAFE region may consider tabulating census data separately for migrants and non-migrants, wherever feasible. Similar tabulations could be made for linguistic groups and other well-defined socio-economic groups wherever feasible. Data for the labour force should also provide for separate cross-tabulations for workers in the traditional and modern sectors and for unemployed and underemployed persons.

155. Studies might be conducted to analyse fertility trends among special groups, such as rural-urban migrants, refugees, persons in resettlement colonies, and the armed forces. Similar studies might be undertaken of persons in the lowest socio-economic stratum, such as landless agricultural workers in rural areas and marginally employed and self-employed workers in urban areas.

156. Additional research might be devoted to (a) determining the relations between family size and educational achievement; (b) determining what educational content, extent and methods are most closely related to fertility and to social and economic development; (c) assessing the impact of rapid population growth on educational standards; and (d) evaluating the relationships between educational activities in the population field (including schools, mass media and adult education) and family planning acceptance and fertility.

157. Further research on the following priority problems should be carried out actively: (a) the relationship between nutrition and fertility, including the duration of lactation and the use of hormonal contraception; (b) the permanent and temporary effects of malnutrition on mental development; (c) micro (family) studies on interrelationships between family size and food consumption, with special reference to related socio-economic and cultural factors, including attitudes and motivations with respect to food, nutrition and family planning; and (d) the relationship between nutritionally based delay in the menarche to the age of menopause.

158. It is recommended that a combined study and pilot project should be undertaken by the United Nations family, possibly initiated by the ILO, to examine the feasibility of providing at least minimal social security (old-age and invalidity benefits) in the rural areas, employing land and land production as the major resource for financing the scheme, and using local rural institutions, such as community development village councils, local government agencies, co-operatives, farmers' organizations and mutual aid societies, as the mechanism for operating it on a country-wide scale.

159. The tabulations from the censuses of 1970 or 1971 provide a feasible base for analysis of family types, kin relations, social and economic characteristics, rates of child-bearing, and the family burdens of child care. ECAFE should appoint a small technical working group to outline suggested tabulations for countries wishing to make such use of their census data.

160. Studies of trends and variations in the size and structure of households and families should be promoted for the ECAFE region. Together with studies of factors affecting size and structure, these studies would provide a basis for the projections of the number of households and families which are indispensable for development planning in the Second Development Decade.

161. The methodology of projecting households and families should be studied in the light of the statistical data available in each country. The forthcoming United Nations manual on methods of projecting households and families will provide basic guidelines.

162. The sex-age-specific headship rate is a pivot around which the modern method of household projections turns. Tabulations of household heads by sex and age are recommended as basic data for analyses leading to household projections.

163. In addition to projections of the total number of households, there is a growing demand for more detailed types of projections of household composition, such as

projections of households of different size and of one-person and two-person households. Such projections are useful for the planning of housing, social welfare, production and distribution of consumer durables, and the like.

164. Studies of the effects of housing shortage on fertility, family size and household size are recommended in order to ascertain the relationships involved.

165. Studies of the relationships between economic development, demographic modernization, and changes in household and family size are recommended for the ECAFE region.

166. Studies should be conducted in the ECAFE region on the distribution of types of houses in relation to such variables as types and uses of housing, crowding, marriage family size, health, environment and mobility.

167. Because of their relevance for social planning and other forms of research, high priority should be given to collection of data on : (a) family and household; (b) labour force, and (c) internal migration and urbanization. Work done by various organizations in these areas should be taken into consideration.

168. Greater attention should be paid to the collection and analysis of income distribution data and the measurement of social inequalities.

169. The introduction of computers has increased the scope of data processing and analysis. As computing facilities are sometimes under-utilized or incorrectly utilized, however, it is recommended that intensive and appropriate use be made of all such facilities. Package programmes for use throughout the region should be developed or adapted from existing programme libraries.

170. Considerable efforts should be made to improve the quality of data. These measures are recommended: (a) development of a grading system of reliability that should be attached to tabulations; (b) employment of intensive surveys, post-enumeration surveys and similar methods to check the reliability and validity of data; (c) intensive pre-testing of census and survey forms and procedures.

171. Systematic evaluation of social development programmes, including the role of foreign experts or family planning programmes, should be carried out. It is recommended that: (a) programmes should be evaluated by agencies other than those carrying out the programme under review; (b) both the intermediary results (performance) as well as the final results (output) should be evaluated; and (c) an integrated cost-benefit analysis covering planning goals, input, performance and output should be made.

172. ECAFE is urged to conduct standardized comparative surveys to collect data necessary for social planning in the region. The 1970-71 census results should also provide data for intensive secondary analysis, over and above the normal census tabulations.

173. As countries in the ECAFE region vary greatly in their historical, geographical, demographic, social and cultural background, as well as in their social planning goals, crucial variables for social planning are expected to differ. An attempt should be made to identify the most crucial variables for individual countries or regions.

174. In view of the fact that WHO is establishing a global network of research, research training, and collaborative clinical research centres for the pooling of information and efforts relevant to the advancement of knowledge in human reproduction, and that the methods of fertility control known at the present time are all that are likely to be available for practical use in the next decade, adequate funds are not only necessary for providing family planning services but also for research into traditional methods, the development of new methods, the conduct of field trials in different cultural and economic settings, and the development of means of educating people to accept and continue to practise contraception.

175. The types of health and-or other organizations and activities most effective for education, motivation, and assistance to families in the adjustment of their size in accordance with their aspirations for the welfare of their children should be explored; and organizations and activities concerned with family change should be an integral part of other plans and programmes of social development at the family, community and national levels.

176. It is recommended that these improvements be effected in statistics relating to manpower income and labour utilization: (a) integrated surveys should be conducted to collect labour force, income and education information, in order to permit better analysis of underemployment as well as the linkage between labour utilization in general and poverty; (b) experiments should be conducted with a view to measuring the under-utilization of labour in the four categories of (i) unemployed, (ii) underemployed by inadequate input (hours), (iii) underemployed by inadequate income and productivity (income), and (iv) underemployed by failure to use maximum education skills; (c) experiments be undertaken with new approaches to the measurement of the work force and its utilization in developing nations, taking into account the deficiencies of the current labour force approach.

Annex I

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Annex II

LIST OF DOCUMENTS

1. POP/Sem.PASD/1	Aide mémoire	Secretariat
2. POP/Sem.PASD/2 Rev.1	Provisional agenda	Secretariat
3. POP/Sem.PASD/3	Report of the Seminar	Secretariat

Background paper

4. POP/Sem.PASD/BP/1	Population aspects of social development	Robert D. Retherford

Summaries of working papers

5. POP/Sem.PASD/WP/1	Population, food and nutrition in Asia and the Far East	K.K.P.N. Rao
6. POP/Sem.PASD/WP/2	To make people count	Robert J. Wolff
7. POP/Sem.PASD/WP/3	Health aspects of family planning —With particular reference to social development	WHO
8. POP/Sem.PASD/WP/4	Population change, conjugal status and the family	James A. Palmore
9. POP/Sem.PASD/WP/5	Problems of data in planning for social development — The role of the child and the family	Secretariat

Introductory statements

	Author
10. Population change, households and housing development	Benjamin Mok
11. Population, housing and housing development	Dr. Shigemi Kono
12. Population change, food supply and nutrition	N.V. Sovani
13. Population change and health development	D.H.S. Griffith
14. Population change and social mobility	Leonard Broom
15. Population change and educational development	J. Porras-Zuniga
16. Population change and developments in manpower, the labour force, employment and income	Philip M. Hauser
17. Population change and developments in manpower, the labour force, employment and income	Y. Okazaki
18. Population change, social dependency and social security	Ashish Bose
19. Population change and transport and communication development	C. Smits
20. Interrelation of population dynamics and social change	Masri Singarimbun
21. Some problems of data and measurement in planning for social development	Hans-Dieter Evers

Working papers

22. Population change, conjugal status and the family	James A. Palmore
23. Population, food and nutrition in Asia and the Far East	K.K.P.N. Rao
24. Health aspects of family planning — With particular reference to social development	WHO
25. Family planning communication in social development	UNESCO
26. To make people count	Robert J. Wolff
27. The interrelations of population dynamics and social change	Irene B. Taeuber
28. Problems of data in planning for social development — The role of the child and the family	Secretariat

Part Two

SELECTED PAPERS

1. POPULATION ASPECTS OF SOCIAL DEVELOPMENT*

I. INTRODUCTION

As the world entered the Second United Nations Development Decade, there was rapidly growing awareness of the importance played by the demographic factor in development. A widely quoted fact was that, during the early 1960s, total income in the world's less developed countries grew almost as fast as that of the more developed countries (4.0 *vs.* 4.4 per cent per year), but that population grew twice as fast (2.6 *vs.* 1.3 per cent), so that economic development, as measured roughly by growth in *per capita* income, grew only half as fast (1.5 *vs.* 3.1 per cent). The gap between more and less developed nations widened.[1]

The 1970 population of the ECAFE region (including the Democratic People's Republic of Korea and the Democratic Republic of Viet-Nam) was approximately 2,000 million. The population of the Asian part of the region (ECAFE region minus Australia and New Zealand), which accounted for all but 15.4 million of the total, represented 54 per cent of the 1970 world population, concentrated in 17 per cent of the world's land area, making it one of the most densely populated areas of the world.[2]

Table 1 shows the growth prospects for the ECAFE region between 1970 and 1980 according to projections (medium variant) that were being prepared by the United Nations Population Division (not yet in final form, hence were not for quotation). The table shows that the population of the ECAFE region is expected to grow at an average annual rate of nearly 2.3 per cent during the 1970s, slightly faster than the rate of nearly 2.2 per cent during the 1960s. Between 1970 and 1980 the total population of the region is expected to increase by 25 per cent, from 2,000 million to 2,500 million. The gigantic increase of 500 million approximately equals the total 1970 population of North and South America combined. In comparison, Western Europe is expected to increase by slightly over 5 per cent over the same period. The developing ECAFE region (excluding Japan, Australia and New Zealand) is growing roughly twice as fast as Western Europe ever grew over any sustained period of time. The most important reason for this disparity is an extremely rapid drop in mortality, due to importation of cheap modern public health techniques from the industrial countries, that has not been accompanied by a correspondingly rapid drop in fertility.

Demographically, the ECAFE region is not homogeneous; and, for this reason, it has been split up in table 1 into five subregions, each of which is characterized by a rough similarity in fertility behaviour over the 1960-1970 decade. The countries in each category are:

Countries with continuing high fertility: Afghanistan, Burma, Fiji, India, Indonesia, Iran, Khmer Republic, Laos, Malaysia, Mongolia, Nepal, Pakistan,[3] Papua New Guinea, Philippines, Republic of Viet-Nam, Thailand.

Countries and areas with high but declining fertility (noticeable fertility declines over the decade 1960-1970): [redacted] Hong Kong, Republic of Korea, Singapore, Sri Lanka (Ceylon).

People's Republic of China, Democratic People's Republic of Korea, Democratic Republic of Viet-Nam (countries for which little demographic information is available).

Japan (low fertility recently achieved).

Australia, New Zealand (European-New World fertility pattern).

Total ECAFE region: all of the above.

Western Europe (included for comparative purposes): Austria, Belgium, France, Federal Republic of Germany, Liechtenstein, Luxembourg, Monaco Netherlands, Switzerland.

Table 1 shows that all these regions are growing rapidly, but that some are growing much more rapidly

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*By Robert D. Retherford, East-West Population Institute East-West Center, Honolulu, Hawaii, United States.

[1] ILO, "Implications of population growth for employment", in *Pakistan International Family Planning Conference*, Dacca, 1969, pp. 105-113.

[2] Hashmi, Sultan S., "Current population levels and prospective growth trends in the Asian part of the ECAFE region", EROPA Conference on The Administrative Implications of Rapid Population Growth in Asia, Manila, May 1971 (unpublished).

[3] Data presented on Pakistan throughout this paper include statistics for Bangladesh, as surveys were conducted prior to 1971.

Table 1.

Population of the ECAFE region, 1970-1980
(medium and low projections, in thousands)

		Countries with continuing high fertility	Countries with high but declining fertility	People's Republic of China, Democratic People's Republic of Korea, Democratic Republic of Viet-Nam	Japan	Australia New Zealand	Total ECAFE	Western Europe
Population 1970:	medium	1,014,362	65,018	794,665	103,499	15,374	1,992,918	148,614
	low	1,007,284	65,018	782,010	— —	— —	— —	— —
Population 1980:	medium	1,339,303	82,144	937,752	116,347	18,785	2,494,331	158,214
	low	1,291,715	80,984	890,967	— —	— —	— —	— —
Increase 1970-1980 (per cent):	medium	32.0	26.3	18.0	12.4	22.2	25.2	6.4
	low	28.2	24.6	13.9	— —	— —	— —	— —
Average annual rate of growth 1970-1980 (per cent):	medium	2.81	2.36	1.67	.94	2.03	2.27	.63
	low	2.52	2.22	1.31	— —	— —	— —	— —
Years required for 1970 population to reach density of one person per square metre assuming that the average 1970-1980 growth rate continues indefinitely:	medium	340	344	568	871	656	430	1,409
	low	380	366	725	— —	— —	— —	— —
Population density 1970 (population/km^2):	medium	249	322	81	280	2	89	150
Ratio 1980 medium projection/1980 low projection:		1.04[a]	1.01	1.05	— —	— —	— —	— —

Source : "World population prospects, 1965-1985, as assessed in 1968" (United Nations, Population Division, Working Paper No. 30, December 1969), and individual country data supplied on special request.

[a] Fiji and Papua New Guinea are omitted from the low projection, but since their populations are small, the ratio in the last row still can be considered exact to tenths of a per cent.

than others. The continuing high-fertility region is growing the fastest, with a projected increase of 32 per cent over the 1970-1980 decade, and the high-but-declining-fertility region is not far behind with 26 per cent. The combined population of the People's Republic of China, the Democratic People's Republic of Korea and the Democratic Republic of Viet-Nam is believed to be growing at a considerably slower rate, lower even than that for Australia and New Zealand. Japan has the lowest projected rate of growth of any of the five subregions.

The next-to-last row of table 1 shows the explosive long-run potential of the projected 1970-1980 annual growth rates. At these rates, the 1970 population of the fastest growing region (continuing high fertility) will reach a density of one inhabitant per square metre in only 340 years and that of the slowest (Japan) in only 871 years (actually Japan's growth over the decade overstates its growth potential due to temporary age-structure effects that will be discussed later). The fact that high-density Japan takes longer to reach one person per square metre than low-density Australia-New Zealand, illustrates that the rate of growth, and not the initial density of the population, is the long-run controlling factor. The long-run effects of even quite small reductions in the growth rate are enormous.

The braking effects on population growth of fertility declines during the 1970s will be partly offset by two factors. First, as shown in table 2, fertility declines will be partly offset by continuing mortality declines in the high-fertility regions. The second factor is the growth potential inherent in the evolving age structure of the population. A rapid transition from high to low birth and death rates is in general accompanied by a temporary inflation of the proportion that women in the reproductive ages are of all women. Eventually this proportion stabilizes at a lower level, but, in the meantime, the birth rate is correspondingly inflated relative to its final stable level. This age-structure phenomenon implies that, even when fertility is successfully reduced to a level that will eventually guarantee zero population growth, considerable growth may still occur before the distortions in age structure work themselves out. As a matter of fact, the 12.4 per cent increase in Japan's population over the 1970-1980 period is almost entirely due to such age-structure effects. Japan's fertility has been roughly at replacement level (close to two children per family, Net Reproduction Rate of one) since 1955, yet the population has continued to grow by about one million persons per year and will not stop growing until about the year 2015.[4]

For the less developed part of the world as a whole, an immediate fertility decline to replacement level would be accompanied by an ultimate population increase of two-thirds before growth would cease.[5] The delayed impact of fertility decline on population growth means that the immediate benefits of fertility reduction are relatively small, but also that the long-run costs of delaying fertility reduction are high. This point will be expanded later.

Because the proportion of the population in urban areas is growing due to rural-urban migration, the urban population of the ECAFE region will show even more spectacular growth over the next decade than total population. In the continuing high-fertility region and in the high-but-declining-fertility region, urban population is expected to grow by 54.2 per cent and 46.9 per cent respectively, even though the urban proportion will increase only by 3.4 and 7.4 percentage points respectively, as shown in table 3. The gain in per cent urban is proceeding at about the same pace as it did in European countries during the heyday of their urban growth, but the rate of urban population growth itself is proceeding at a much faster pace because of the much higher rate of urban natural increase.[6]

The rate of urban natural increase in developing Asia is much higher than it was in nineteenth-century Europe at a comparable stage of urbanization because (a) the natural increase of the population as a whole is much higher, and (b) the urban disadvantage in natural increase is much lower and often non-existent. In Europe, exceedingly high urban mortality, due to contaminated water supplies and rudimentary public health practices, and relatively low urban fertility, kept urban natural increase close to zero, and often it was negative; whereas, in developing Asia, low urban mortality due to imported public health measures having been introduced first into urban areas, and relatively high urban fertility have kept the natural increase of cities close to that of the rural areas. For these reasons, rural-urban migration accounts for a relatively small proportion of city growth in developing Asia, whereas in nineteenth-century Europe it accounted for almost all of city growth.

These differences in the pattern of urbanization have profound implications for development. In Europe, the growth of cities kept down increases in rural densities (international migration to the New World played a role, too), allowing consolidation of agricultural holdings, increased capitalization of agriculture, and increased rural *per capita* incomes. Surplus rural manpower, absorbed relatively easily into the cities because of low or negative urban natural increase, produced goods and services that in turn helped to modernize agriculture. In

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[4] Avery, R. and Freedman R., [redacted] Implications of fertility at replacement levels", *Studies in Family Planning*, No. 59, November 1970, pp. 1-4.

[5] Keyfitz, N., "The impact of modernization", in *Approaches to the Science of Socio-economic Development* (Paris, UNESCO, 1971), pp. 83-91.

[6] Davis, K., "The urbanization of the human population", *Scientific American*, Vol. 213, No. 3, September 1965, pp. 41-53.

Table 2.

The trend of mortality and fertility in the ECAFE region, 1970-1980, as measured by life expectancy at birth and the gross reproduction rate[a]

(medium projection)

—		Countries with continuing high fertility[b, c]	Countries with high but declining fertility[c]	People's Republic of China, Democratic People's Republic of Korea, Democratic Republic of Viet-Nam[c]	Japan	Australia New Zealand	Total ECAFE[b, c]	Western Europe
Life expectancy	1965-1970	48.6	62.1	50.1	70.9	71.8	51.0	71.7
	1970-1975	51.6	64.6	53.1	72.9	72.1	53.9	72.4
	1975-1980	54.6	66.9	56.1	74.1	72.4	56.6	72.9
Gross reproduction rate	1965-1970	3.05	2.41	2.16	1.0	1.5	2.54	1.3
	1970-1975	2.99	2.20	1.94	1.0	1.5	2.44	1.3
	1975-1980	2.78	1.99	1.76	1.1	1.5	2.27	1.3

Source : "World population prospects", *op. cit.*, and individual country data supplied on special request.

[a] The gross reproduction rate is the number of female children a woman would have if she survived the reproductive age span having children according to current age-specific birth rates.

[b] Fiji and Papua New Guinea are omitted.

[c] Figures obtained by weighting country values by mid-period total population.

Table 3.

Rural-urban composition of the ECAFE region, 1970-1980
(medium projection)

	Countries with continuing high fertility	Countries with high but declining fertility	People's Republic of China, Democratic People's Republic of Korea, Democratic Republic of Viet-Nam	Japan	Australia New Zealand	Total ECAFE[a]	Western Europe
Percentage urban[b]: 1970	20.0	45.6	21.2	72.3	83.4	24.5	72.5
Percentage urban: 1980	23.4	53.0	27.8	80.0	86.5	29.1	77.1
Rural population: 1970	810,161	35,399	625,909	28,618	2,559	1,502,646	40,855
Rural population: 1980	1,024,650	38,620	676,935	23,253	2,533	1,765,991	36,291
Percentage increase	26.5	9.1	8.2	-18.7	-1.0	17.5	-11.2
Urban population: 1970	202,858	29,619	168,756	74,881	12,815	488,929	107,764
Urban population: 1980	312,862	43,524	260,817	93,094	16,252	726,549	121,923
Percentage increase	54.2	46.9	54.6	24.3	26.8	48.6	13.1

Source: "Urban and rural population: Individual countries 1950-1985 and regions and major areas 1950-2000" (ESA/P/WP.33/Rev.1).

[a] Fiji and Papua New Guinea are excluded; Brunei and Portuguese Timor are included in addition to the original countries listed for these groups.

[b] The definition of urban is that used by each individual country.

Table 4.

Population densities in the ECAFE region 1970-1980, population/km^2 (medium projection)

		Countries with continuing high fertility[a]	Countries with high but declining fertility	People's Republic of China, Democratic People's Republic of Korea, Democratic Republic of Viet-Nam	Japan	Australia New Zealand	Total ECAFE[a]	Western Europe
Total population/Total land:	1970	80.6	322.4	80.8	280.0	1.9	64.4	150.1
	1980	106.4	407.3	95.3	314.7	2.4	80.5	159.8
Total population/Total land:	1970	362.0	1,271.1	701.6	1,799.0	3.1	219.5	258.1
	1980	478.0	1,605.9	827.9	2,022.4	3.7	274.7	274.8
Total population/Total land:	1970	290.0	692.1	552.6	497.4	.5	165.7	71.0
	1980	366.8	755.0	597.7	404.2	.5	194.8	63.0

Source : Figures for arable land area were taken from FAO, *Production Year Book*, 1968. Table 1. *Total area* includes area under inland waters. *Arable land* includes land under permanent crops, land temporarily fallow, temporary meadows, land under market and kitchen garden, crops, fruit trees, vines, shrubs and rubber plantations, but not forest land.

[a] Fiji and Papua New Guinea are excluded.

Table 5.

Trends in Total and *per capita* real GNP, 1960-1965[a]

Average annual rate of growth (per cent) in:	Countries with continuing high fertility	Countries with high but declining fertility	Japan	Australia New Zealand	Total ECAFE	Western Europe
Total GNP	3.6	6.9	9.8	5.3	6.2	5.4
Population	2.5	2.8	1.0	2.1	2.4	1.2
Per capita GNP	1.0	4.0	8.7	3.2	3.7	4.1

Source : Calculated from *Yearbook of National Accounts Statistics* 1969 vol. 2, (United Nations publication, Sales No. : E. 71. XVII.3), tables 1C, 7; *Demographic Yearbook* 1969 (United Nations publication, Sales No. : E/F 70.XIII. 1), table 4.

[a] Countries excluded due to unavailability of data during preparation of paper are : Afghanistan, Fiji, Laos, Malaysia, Nepal, and Papua New Guinea; Hong Kong and Singapore; People's Republic of China, Democratic People's Republic of Korea, Democratic Republic of Viet-Nam; and Liechtenstein, Luxembourg and Monaco.

this sense, the pattern of rural-urban demographic change meshed with economic development.

In contrast, population growth in the developing Asian region is so fast that, in spite of rapid increases in per cent urban, rural population densities are increasing rapidly, as shown in table 4. Rural densities are already much higher than they were (or are) in western Europe as a whole, and the possibilities of alleviating them through international migration or opening up of new lands are practically negligible. Historically, population pressure appears to have stimulated agricultural change[7], but, in developing Asia, the time dimension has been so compressed by historically unprecedented population growth rates that institutional changes in agriculture which normally occur over generations, and the increases in land productivity that accompany them, are barely keeping ahead of increases in population and in some cases are falling behind. The absorption of rural migrants into the urban labour force is made difficult by the necessity to absorb the rapid urban natural increase also, and by the fact that the urban industrial sector is more capital-intensive and less labour-intensive than it was in nineteenth-century Europe. Underemployment is, therefore, a characteristic of urban as well as rural areas, impeding social mobility and perpetuating inequalities of income distribution. Investment in modern capital-intensive technology is retarded by the abundance of cheap labour, by low levels of savings and market demand, due both to low wages and to the high dependency ratios that accompany rapid population growth, and by enormous competing non-industrial investments in housing, education, and other social services necessary simply to keep up with population growth. In the sense that rapid population growth is difficult to absorb in both rural and urban areas, developing Asia is both "over-ruralized" and "over-urbanized", even though, in terms of per cent urban, high potential urbanization exists. In sum, it would appear that, in developing Asia, demographic changes do not mesh with economic and social development as they did in nineteenth-century Europe.

The only historical cases where population grew in the now-developed countries at rates comparable to developing Asia were in the United States, Canada, Australia and New Zealand, where international migration played an important role. But these countries had very large unexploited agricultural resources. Furthermore, natural and migratory increases are very different in their economic effects because the age structure is weighted towards the unproductive ages below 15 under conditions of rapid natural increase, and toward the young adult productive ages under conditions of rapid migratory increase. Hence, developing Asia is far from repeating the European-New World pattern either.

II. POPULATION CHANGE AND CHANGES IN INCOME, LABOUR FORCE, MANPOWER AND EMPLOYMENT

A. Income

In the case of the less developed world as a whole, it has already been noted that, because of population growth, average annual growth in *per capita* income during the early 1960s was about one half that of total income. Table 5 shows that, in the countries of the ECAFE region with continuing high fertility, the erosion

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[7] E. Boserup, *The Conditions of Agricultural Growth: The Economics of Agrarian Change under Population Pressure*, (London, George Allen & Unwin, 1965).

Table 6.

Per capita income under declining fertility in comparison to that under constant high fertility, various time periods

Model	Country	Percentage ratio of *per capita* income in declining-fertility case to that in high-fertility case, after		
		10 years[a]	20 years[a]	30 years[a]
Coale and Hoover	India	103	113—116	138—148
Hoover and Perlman	Pakistan	—	114—120	—
Ruprecht	Philippines	104—105	117—132	135—193
Enke	Typical *ldc*[b]	109	119	129
Zaidan	Typical *ldc*[b]	103	114	141

Source : Except for the Zaidan model, the table is taken from Ruprecht, T. and Wahren, C., *Population Programmes and Economic and Social Development* (Paris, OEDC, 1970), p. 21. References are : Coale, A.J. and Hoover, E.M., *Population Growth and Economic Development in Low-Income Countries* (Princeton, N.J., Princeton University Press, 1958); Hoover, E.M. and Perlman, M., "Measuring the effects of population control on economic development : Pakistan as a case study", *Pakistan Development Review*, vol. 6, No. 4, Winter 1966, pp. 545-566; Ruprecht, T., "Population and economic development in the Philippines" (unpublished); Enke, S., *Raising Per Capita Income through Fewer Births* (Santa Barbara, Calif., TEMPO, General Electric Company, March 1967); Zaidan, G.C., "Population growth and economic development", *Studies in Family Planning*, No. 42, May 1969.

[a] Range in ratios is produced by alternative parameter values, e.g. savings propensities.

[b] Less developed countries.

of economic development by population growth was even more serious. In this region, average annual growth of *per capita* GNP was only 27.8 per cent of growth in total GNP over period 1960-1965. On the other hand, the high but declining fertility region was able to register large gains in *per capita* GNP despite rapid population growth, indicating that rapid population growth is not an insuperable obstacle to economic development.

A number of economic growth models have been designed to explore the effects of different trends in fertility on *per capita* income, and several of these have been applied to Asian countries. All the models take predetermined population projections and allow them to work through capital output ratios or production functions to yield output projections, although the parameters included and the presumed relationships between them vary from model to model. Table 6 shows results from several of these model studies. Declining fertility increases *per capita* income from 3 to 9 per cent after 10 years, from 13 to 32 per cent after 20 years, and from 29 to 93 per cent after 30 years, depending on the choice of model and parameter values. The short-run benefits of fertility reduction are small, but the long-run benefits are substantial. It follows that the long-run costs of delaying fertility reduction are also high, but because development plans in the ECAFE region are normally short-run in focus, about 5 to 10 years, there has been a tendency to dismiss the population variable as not very important.

The basic mechanism of the models has been explained as follows.[8] Fertility reductions mean that the national income is shared by fewer persons. The national income itself is not reduced in the short run and may well be increased, since fertility reduction does not damage the productive capacity of the economy, which is a function of the amount of natural resources, the accumulation of capital, and the quantity and quality of the labour force. The amount of natural resources is unaffected by fertility reductions. Capital accumulation is affected positively, since dependency ratios are lower; i.e. families have fewer children and are therefore able to divert a greater part of their income into savings, which are eventually channelled into investment. The size of the labour force is affected negatively by fertility reduction, but only after a 15-year time lag.

The increase in savings can occur in the models either through private savings or through increased government taxation. The models, however, have been criticized for assuming that additional *per capita* income does in fact result in additional savings, since, in practice, additional individual or government income may be consumed rather than saved. The question needs to be studied, but a recent investigation suggests that the dependency burden, which fertility reductions lighten immediately, is an important explanation of the high observed differences in savings ratios among the countries of the world, in addition to the other variables usually considered important.[9] Dependency ratios in the high fertility areas of the ECAFE region are very large, as shown in table 7. They are projected to drop somewhat by 1980 but will still be much higher than in the more developed countries. The stimulus to investment that a drop in dependency ratios would produce, would help to offset the high proportion of GNP that has to be reinvested in the high-fertility region simply to keep *per capita* income at a constant level, at the same time that this proportion itself would decline. In India, this largely "demographic investment" exceeds 10 per cent of GNP; and, in Malaysia, Thailand, and the Philippines, it ranges between 7.5 and 10 per cent; whereas in European countries and the United States, it is less than 5 per cent.[10]

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[8] Condensed for the most part from Zaidan, G.C., "Population growth and economic development", *Studies in Family Planning*, No. 42, May 1969.

Though the models discussed above assess the major beneficial effects of reduced fertility on *per capita* income, they omit some important effects because of difficulties of measurement. Most of these effects would increase the calculated benefits. One such effect is the improved nutrition, health and education that affects positively the quality of the labour force. Another complex of effects concerns the impact of economic development itself on fertility. The models assume that fertility declines are introduced independently of economic change, but historical experience shows that the profound social changes accompanying increases in *per capita* income (such as education, urbanization, employment of women and increased opportunities for social mobility) reinforce any autonomously induced (e.g. by family planning) decline in fertility. This raises the question of the relative effectiveness of family planning programmes versus economic development itself in bringing about fertility decline, a problem that will be discussed later (sect. XI below).

B. Labour force, manpower, employment

Due to the 15-year time lag between birth and entrance into the labour force, the growth of the population of labour force age (15-64) in the ECAFE region will be unaffected by the fertility reductions projected for the 1970-1980 decade. Because of improved survivorship and rapidly increasing annual birth cohorts between 1955 and 1965, the population of labour force age will increase very rapidly between 1970 and 1980, more rapidly even than total population (26.4 *vs.* 25.2 per cent over the decade for the medium projection).

It has been mentioned already that, in high-fertility-low-mortality-low-income countries, rapid additions to the labour force are difficult to absorb in both rural and urban areas. Table 8, which presents projections of the occupational distribution of the labour force between 1970 and 1980, specifies in more detail the kinds of manpower and employment strains that can be expected to take place. These projections, prepared by the ILO in 1966, are not exactly comparable with those in the previously discussed tables, because the country groups are somewhat different (see footnote to table 8) and the underlying population projections utilized are the United Nations 1963 projections instead of the 1968 ones. Nevertheless, table 8 is still useful in illustrating, in a broad sense, the kinds of manpower strains that will take place.

Table 8 shows that, whereas in Japan, Australia and New Zealand, and western Europe, farm populations will decline considerably (by 50 per cent in western Europe), they will increase in the three less developed Asian regions. Assuming that the supply of agricultural land will remain approximately fixed in these three regions (a plausible assumption since possibilities for opening up of new lands are very limited and will be offset by the expropriation of agricultural land for urban and other non-farm use), farm densities (as opposed to the over-all rural densities in table 4, which included a certain amount of rural non-farm population) will increase by approximately 9.6 per cent in the high-fertility region. Rural underemployment and stagnation of rural *per capita* income are, therefore, likely to remain serious problems and may worsen in some countries.

Because of the large proportionate size of the farmer group in the high-fertility region (68.4 per cent of the labour force in 1970), relatively small proportionate shifts out of agriculture between 1970 and 1980, combined with the rapid over-all growth of the labour force, produce very large proportionate manpower increases in non-farm occupations. The professional and clerical groups, for example, are expected to increase by about 90 per cent. The very severe strain put on the absorptive capacity of non-farm occupational sectors helps to explain why underemployment is an urban as well as a rural phenomenon.

Although the proportionate manpower increases in non-farm occupations are large, the absolute increases in them are relatively small, as the occupational composition of the 1970-1980 manpower increase in table 8 shows. The result is that agriculture still absorbs a large proportion of the total increase in the labour force—31.8 per cent in the high-fertility region.

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[9] Leff, N.H., "Population growth and savings potential" (unpublished preliminary report of the office of Programme Co-ordination, United States Agency for International Development); cited in *Zaidan*, op. cit., p. 5.

[10] Zaidan, op. cit., p. 5.

Table 7.

Percentage age distributions and dependency ratios in the ECAFE region for the medium and low variant projections, 1970 and 1980

	Countries with continuing high fertility	Countries with high but declining fertility	People's Republic of China, Democratic People's Republic of Korea, Democratic Republic of Viet-Nam	Japan	Australia New Zealand	Total ECAFE	Western Europe
1970							
Medium							
0-14	43.4	41.6	37.0	24.0	29.4	39.6	24.4
15-64	53.7	55.0	59.1	69.1	62.2	56.8	62.7
65 +	3.0	3.5	4.0	7.0	8.4	3.6	12.8
dependency ratio	86.1	81.9	69.2	44.7	60.7	76.1	59.4
Low							
0-14	43.1	41.6	35.9	—	—	—	—
15-64	53.9	55.0	60.1	—	—	—	—
65 +	3.0	3.5	4.0	—	—	—	—
dependency ratio	85.4	81.9	66.5	—	—	—	—
1980							
Medium							
0-14	43.4	36.7	34.0	24.6	28.9	38.7	24.2
15-64	53.4	59.2	61.5	66.7	62.5	57.3	62.0
65 +	3.2	4.2	4.5	8.6	8.6	4.0	13.8
dependency ratio	87.3	69.0	62.6	49.8	57.5	74.5	61.4
Low							
0-14	41.7	35.8	30.7	—	—	—	—
15-64	55.1	60.0	64.6	—	—	—	—
65 +	3.3	3.0	4.7	—	—	—	—
dependency ratio	81.6	64.6	54.8	—	—	—	—

Source: "World population prospects", *op. cit.*, and individual country data supplied on special request.

[a] Dependency ratio = population aged 0-14 and 65 + /population aged 15-64

Table 8.

Occupational structure of employment in the ECAFE region, 1970-1980

(in percentages)

		Profess-ional 0	Administra-tive and managerial 1	Clerical 2	Sales 3	Farmers 4	Transport and communica-tions 6	Blue collar 5.7.8	Service 9	Total
High—fertility countries[a]	Occupational composition in 1970	1.9	1.0	2.1	6.5	68.4	1.3	15.2	3.6	100.0 (777.3)
	Occupational composition in 1980	2.9	1.1	3.2	6.9	62.2	1.4	18.3	4.0	100.0 (938.2)
	Occupational composition of increase	7.8	1.7	8.8	8.9	31.8	1.7	33.1	6.2	100.0 (160.9)
	Increase in each category	86.2	34.2	87.6	28.1	9.6	26.5	45.1	36.2	20.7
Japan	Occupational composition in 1970	5.8	3.1	13.1	9.8	23.2	4.0	34.0	6.9	100.0 (51.8)
	Occupational composition in 1980	6.5	3.6	14.4	9.7	17.6	4.7	36.2	7.2	100.0 (55.5)
	Occupational composition of increase	16.2	10.8	32.4	8.1	-59.4	13.5	67.6	10.8	100.0 (3.7)
	Increase in each category	20.0	25.0	17.6	5.9	-18.3	23.8	14.2	11.1	7.1
Australia New Zealand	Occupational composition in 1970	9.8	4.9	9.8	8.2	13.1	6.6	37.7	9.8	100.0 (6.1)
	Occupational composition in 1980	9.7	5.6	11.1	8.3	9.7	6.9	38.9	9.7	100.0 (7.2)
	Occupational composition of increase	9.1	9.1	18.2	9.1	-9.1	9.1	45.4	9.1	100.0 (1.1)
	Increase in each category	16.7	33.3	33.3	20.0	-12.5	25.0	21.7	16.7	18.0
Total ECAFE	Occupational composition in 1970	2.2	1.2	2.8	6.8	65.2	1.5	16.5	3.8	100.0 (835.2)
	Occupational composition in 1980	3.1	1.3	3.9	7.1	59.3	1.6	19.4	4.2	100.0 (100.9)
	Occupational composition of increase	8.0	1.9	9.4	8.9	29.5	2.0	34.0	6.3	100.0 (165.7)
	Increase in each category	72.9	32.6	66.1	26.1	9.0	26.0	40.3	33.0	19.8
Western Europe	Occupational composition in 1970	9.9	5.0	10.9	8.8	11.7	6.4	37.6	9.6	100.0 (61.4)
	Occupational composition in 1980	10.6	6.4	11.8	9.3	5.7	6.9	39.4	9.9	100.0 (63.5)
	Occupational composition of increase	28.6	47.6	38.1	23.8	-171.4	23.8	90.5	19.0	100.0 (2.1)
	Increase in each category	9.8	32.2	11.9	9.2	-50.0	12.8	8.2	6.8	3.4

Source : Calculated from J.G. Scoville, "The occupational structure of employment", table 7, in *Sectoral Aspects of Projection for the World Economy, First Interregional Seminar on Long-term Economic Projections, Elsinore, Denmark, 14-27 August 1966*, Vol. III: *Discussion Papers* (United Nations publication, Sales No.: E. 69. II. C. 3). pp. 77-109

[a] The high-fertility region is a combination of the continuing-high-fertility region, high-but-declining-fertility region, and People's Republic of China, Democratic People's Republic of Korea and Democratic Republic of Viet-Nam. Papua New Guinea and Fiji are excluded. Data are included for Bhutan, Brunei, Maldive Islands, Portuguese Timor, Sikkim, Bonin Islands, Ryuku Islands, and Macao.

Labour force trends not only are affected by population change, they also have reciprocal effects on fertility. A large number of studies have shown that the percentage of the labour force employed outside agriculture is strongly associated with fertility decline, as is also female labour force participation.[11] It has been shown that the proportion of the labour force employed outside agriculture is expected to increase substantially between 1970 and 1980 (table 8), and presumably this development has an important bearing on the corresponding projected fertility declines (table 2). In contrast, female labour force participation rates are expected to decrease, from 36.25 to 36.05 per cent in east Asia and from 23.38 to 21.79 per cent in south Asia.[12]

III. POPULATION CHANGE AND EDUCATIONAL DEVELOPMENT

Rapid population growth impedes educational development in several ways. Most obviously it produces a rapid increase in the school-age population. It also produces high school-age dependency burdens (the ratio of school-age population to working-age population), forcing many students to drop out in order to work and thus contributing to the high drop-out rates that characterize most countries with rapidly growing populations. Birth cohorts from which teachers are recruited are relatively small compared with the birth cohorts from which their students come, so that teacher requirements may put unreasonable demands on the pool of available educated manpower. Non-recurring education expenditures (due primarily to net increases in plant, equipment and personnel) are a large proportion of total education expenditures and impede efforts to upgrade the quality of existing plant, equipment and personnel.

Table 9 shows for ECAFE subregions the percentage increase in population aged 5-14, which corresponds roughly to the population of primary and secondary school age. The increase in the continuing-high-fertility region, according to the medium projection, is an enormous 38.1 per cent. It is only 7.7 per cent for the high-but-declining-fertility region, due to the fertility declines in this region during the 1960s. For the remaining ECAFE subregions, the increase is in the range of 11 to 17 per cent, and for western Europe, it is only 5.5 per cent.

Table 10 shows that the continuing-high-fertility region faces not only by far the largest increases in school-age population, but also by far the lowest enrolment ratios (ERs) in the ECAFE region. The total enrolment increases implied by both population growth and rapidly increasing ERs are staggering. For example, on the optimistic assumption that, by 1970, the average ER for this subregion had increased from 40 to 50 per cent, a further increase between 1970 and 1980 from 50 to 70, combined with the projected 38 per cent increase in school-age population, would imply a total enrolment increase of 93 per cent. The same ER increase in the absence of population growth would increase enrolment by 40 per cent, so that over one half of the enrolment increase would stem from population growth.

A large proportion of the population in the school-going ages is characteristic of populations that have grown rapidly in the recent past. Table 11 shows how the burden of educational expenditure is related to the age structure of ECAFE subregion populations in 1965. Lines 1 and 2 of the table show that the proportion of the population aged 5-14 is relatively very large in regions whose populations have been growing rapidly. In the case of the ratio of school-age population 5-14 to working-age population 15-64, lines 3 and 4 show regional differences that are even more dramatic. Line 4 says that a given level of educational expenditure *per capita* aged 5-14 bears twice as heavily on the working-age population in the continuing-high-fertility and high-but-declining-fertility subregions than it would if these regions had the same age structure as western Europe. Percentage of GNP spent on public education (lines 7 and 8) compares more favourably with the western European standard than does the absolute level of education expenditure *per capita* aged 5-14 (lines 5 and 6), but when percentage of GNP spent on education is normalized (line 9) by dividing by percentage of population aged 5-14, the attenuating effects of age structure are seen to be severe. Comparison of lines 8 and 9 for the high-but-declining-fertility region shows that educational expenditure is spread 44 per cent more thinly [(68-38)/68] than it would be if the region had the same age structure as western Europe. In the continuing-high-fertility region, it is spread 40 per cent more thinly. The inescapable conclusion is that the age-structure effects in the present stemming from rapid population growth in the past are very costly, quite apart from the direct costs of rapid enrolment increase itself.

Very few studies have been done on the effects of alternative population projections on future educational requirements and costs, a fact that is rather surprising considering that enrolments, via the intermediate variable of enrolment ratios, are directly related to size of population in the school-going ages. However, Gavin Jones of the Population Council, in co-operation with others, has done a series of three country studies on this

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[11] This literature has recently been reviewed in Kasarda, J.D., "Economic structure and fertility: A comparative analysis", *Demography*, vol. 8, No. 3, August 1971, pp. 307-318.

[12] *Labour Force Projections* (Geneva, ILO, 1971), part V, pp. 73, 77.

Table 9.

Percentage increase in the population aged 5-14, 1970—1980 (medium projection)

Countries with continuing high fertility	Countries with high but declining fertility	People's Republic of China, Democratic People's Republic of Korea, Democratic Republic of Viet-Nam	Japan	Australia New Zealand	Total ECAFE	Western Europe
38.1	7.7	11.5	16.7	12.7	25.9	5.5

Source : "*World population prospects*" *op. cit.*, and individual country data supplied on special request.

Table 10.

Enrolment ratios[a] primary-secondary education combined, 1965[b]

Countries with continuing high fertility[c]	Countries with high but declining fertility	Japan	Australia New Zealand	Total ECAFE[c]	Western Europe[c]
40	73	92	89	47	87

Source : Calculated from *UNESCO Statistical Yearbook 1969* (Paris: UNESCO, 1971), tables 2.5, 2.8, 2.9.

[a] Percentage enrolled of corresponding population of school age as defined by each country.

[b] 1965 was chosen rather than a later year in order to avoid omitting countries without more recent data.

[c] Countries omitted from the calculation of this table due to insufficient information are Burma, Fiji, Mongolia, Papua New Guinea, People's Republic of China, Democratic People's Republic of Korea, Democratic Republic of Viet-Nam, Monaco and Switzerland.

Table 11.

Public education expenditure as related to age structure in 1965[a]

	Countries with continuing high fertility[b]	Countries with high but declining fertility[b]	Japan	Australia New Zealand	Total ECAFE[b]	Western Europe[b]
1. 5-14 age group as percentage of total population	26.1	27.5	17.5	19.7	25.2	15.5
2. Index with Western Europe = 100	169	177	113	127	163	100
3. 5-14 age group as percentage of 15-64 age group	48.3	51.9	25.8	32.1	45.2	24.2
4. Index with Western Europe = 100	200	214	107	133	187	100
5. Average annual public education expenditure per person aged 5-14 (in US 1965 dollars)	11	15	226	367	32	489
6. Index with Western Europe = 100	2	3	46	75	7	100
7. Percentage of GNP spent on public education	2.5	2.7	4.4	3.6	3.5	4.0
8. Index with Western Europe = 100	62	68	110	90	88	100
9. (7) ÷ (1) Index with Western Europe = 100	37	38	97	71	54	100

Source: Population data were taken from United Nations 1968 estimates of population in 1965, mostly unpublished; GNP by country for 1965 was taken from *Yearbook of National Accounts Statistics 1969, op. cit.*, table 1C; Percentage of GNP spent on public education was taken from *UNESCO Statistical Yearbook 1969, op. cit.*, table 2.18.

[a] 1965 was chosen rather than a later date because later dates would have involved omission of a large number of countries for lack of sufficient data.

[b] Because of insufficient data, the following were omitted from the calculation of the table: Afghanistan, Fiji, Indonesia, Laos, Malaysia, Mongolia, Nepal, Papua New Guinea, Hong Kong and Singapore; People's Republic of China, Democratic People's Republic of Korea and Democratic Republic of Viet-Nam; Liechtenstein, Luxembourg, and Monaco.

topic, as well as one more general study.[13] The three countries are the Republic of Korea (starting in 1965), Thailand (starting in 1970), and Pakistan (starting in 1960). In the following summary of Jones's results, two population projections are considered, one high and one low, and two enrolment ratio (ER) and pupil-teacher ratio (PTR) projections, one constant and one improving. The assumptions underlying these projections, which are for 30 years, are :

Assumptions underlying population projections:

Republic of Korea, high projection : Gross Reproduction Rate remains constant at about three. Mortality declines according to the United Nations model of composite world historic experience.

Republic of Korea, low projection : Fertility declines 10 per cent per year during 1965-1967, then declines copying the Japanese pattern after the Second World War, but takes twice as long to achieve the same declines.

Thailand, high projection : Fertility after 1965-1970 declines by a quarter in 30 years. Expectation of life increases by one-third year per annum.

Thailand, low projection : Fertility declines by about one-half in 30 years. The decline in the period 1970-1976 is consistent with the targets of the family planning programme. Mortality assumption same as in high projection.

Pakistan, high projection : Fertility remains constant at its 1960-1965 level throughout the period. Life expectancy increases exponentially to approximately 61 years for males and 64 years for females between 1960-1965 and 1980-1985.

Pakistan, low projection : Fertility declines by 50 per cent between 1960-1965 and 1980-1985. Mortality assumption same as in high projection.

Assumptions underlying enrolment ratio and pupil-teacher ratio projections:

Republic of Korea, constant assumption : ERs and PTRs remain constant at actual 1965 levels, given below.

Republic of Korea, improving assumption : Between 1965 and 1995, ERs for each level move as follows : primary school from 0.96 to 0.98, middle school males from 0.47 to 0.84, middle school females from 0.28 to 0.84, high school males from 0.29 to 0.50, high school females from 0.16 to 0.40, college males from 0.09 to 0.16, and college females from 0.03 to 0.09. PTRs move : primary school from 62.4 to 40.0, middle school from 39.4 to 22.0, high school from 30.2 to 17.8, college from 20.3 to 20.3.

Thailand, constant assumption : Between 1970 and 2000, ERs move : lower primary from 0.93 to 0.88, upper primary from 0.30 to 0.48, secondary from 0.12 to 0.17, university from 0.015 to 0.020 (assumptions are also made about vocational and teacher training institutions). PTRs are not brought into the analysis.

Thailand, improving assumption : ERs move: lower primary from 0.93 to 0.88, upper primary from 0.30 to 0.95, secondary from 0.12 to 0.29, university from 0.015 to 0.040.

Pakistan, constant assumption : ERs and PTRs remain constant at actual 1960 levels, given below.

Pakistan, improving assumption : Between 1960 and 1990, ERs move : Pakistan primary from 0.30 to 0.95, Bangladesh primary from 0.37 to 0.95; Pakistan secondary from 0.14 to 0.50, Bangladesh secondary from 0.07 to 0.50. PTRs move: Pakistan primary from 33 to 30, Bangladesh primary from 39 to 30; Pakistan secondary from 35 to 20, Bangladesh secondary from 20 to 20. College and university level omitted from the analysis.

Table 12 shows projected school enrolment under the different population and ER assumptions for the three countries. Enrolment differences under the alternative assumptions are seen to be less marked for Thailand than for the Republic of Korea or Pakistan, consistent with the fact that the assumptions underlying the high and low population projections and the constant and improving ER projections differ much less for Thailand than for the other two countries. In the high fertility-improving ER variant, total enrolment increases from 3 to 3.5 times in 30 years in the Republic of Korea and Thailand, whereas in Pakistan, which starts with much lower ERs, it increases over 11 times. The high-low ratio of enrolments under the high population projection to enrolments under the low projection shows that, after the first 10 years, the enrolment advantage of declining fertility over constant fertility is almost negligible in Thailand and Pakistan. It is larger in the Republic of Korea (17 to 18 per cent) because primary ERs are already high and hardly change in the Republic of Korea projections, so that the effects of population growth are not washed out by large increases in ERs during the

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[13] Burke, M. and Jones, G., "The demographic obstacle to the attainment of educational goals in the Republic of Korea" (New York, The Population Council, 1969), mimeo; Jones, G., "Effect of population change on the attainment of educational goals in developing countries", in National Academy of Sciences, *Rapid Population Growth* (Baltimore, Md., Johns Hopkins University Press, 1971), pp. 315-367; Jones, G., and Tantivejakul, V., "The effect of alternative population trends on the attainment of educational goals in Thailand: A preliminary investigation" (Bangkok, National Economic Development Board of Thailand, Manpower Planning Division, 1971), mimeo; Jones, G. and Mitra, J., "The demographic obstacle to the attainment of educational goals in Pakistan" (New York: The Population Council, 1969), mimeo.

Table 12.

Indices of school enrolment under alternative projections of population and enrolment ratios

Country	Enrolment Ratio Assumption	Population projection	Number of Years after Start of Projection			
			0	10	20	30
Republic of Korea (1965)	Constant	High	100	132	181	272
		Low	100	112	91	—
		High/Low	100	118	199	—
	Improving	High	100	147	216	342
		Low	100	126	114	—
		High/Low	100	117	189	—
Thailand (1970)	Constant	High	100	154	195	241
		Low	100	149	155	167
		High/Low	100	103	126	144
	Improving	High	100	164	241	312
		Low	100	159	193	218
		High/Low	100	103	125	143
Pakistan (1960)	Constant	High	100	143	217	350
		Low	100	141	172	188
		High/Low	100	101	126	186
	Improving	High	100	256	557	1,126
		Low	100	257	450	627
		High/Low	100	100	124	180

Sources: See foot-note 13.

Note: Figures for the Republic of Korea and Thailand include college as well as primary and secondary school enrolment. Figures for Pakistan include only primary and secondary school enrolment.

second five years of the projection. In all cases, the enrolment effects of fertility declines are comparatively small after only 10 years, because of the time lag between birth and school entrance (the lag being around 6 years for primary, 11 years for secondary, and 18 years for college, varying somewhat by country). After 20 years or more, on the other hand, the enrolment effects of fertility decline are large. In the Republic of Korea after 20 years, enrolment under the high population projection is 89 to 99 per cent larger than under the low fertility projection. Corresponding figures for Thailand and Pakistan after 30 years are 43 to 44 per cent and 80 to 86 per cent. In sum, table 12 shows that the enrolment savings from fertility decline are small in the short run but large in the long run. The long-run costs of waiting to reduce fertility are large.

The number of required teachers is affected not only by population growth and increases in enrolment ratios but also by improvements in pupil-teacher ratios. Hence, the number of required teachers expands even faster than enrolment, as shown by comparison of tables 12 and 13. Under the high fertility-improving ER and PTR assumption the number of required teachers increases over 6 times in the Republic of Korea after 20 years and by almost 15 times in Pakistan after 30 years. The percentage advantage in teacher requirements in the low population projection as compared with the high projection is therefore somewhat less than in the case of enrolment, since, with PTR improvement added to population increase and ER improvement, the relative importance of population increase is somewhat lessened.

With projected educational needs (plant, equipment, personnel) growing faster than GNP (assumed to increase at 6 per cent per year over the projection period), under the improving ER and PTR assumption, educational expenditure rises as a percentage of GNP, as

Table 13.

Indices of teacher requirements under alternative projections of population, enrolment ratios, and pupil-teacher ratios

Country	Enrolment ratio and pupil-teacher ratio assumption	Population projection	Number of years after start of projection			
			0	10	20	30
Republic of Korea (1965)	Constant	High	100	135	183	274
		Low	100	117	98	—
		High/Low	100	115	187	—
	Improving	High	100	200	377	610
		Low	100	175	224	—
		High/Low	100	114	168	—
Pakistan (1960)	Constant	High	100	144	218	353
		Low	100	144	175	193
		High/Low	100	100	125	183
	Improving	High	100	291	674	1,493
		Low	100	292	554	809
		High/Low	100	100	122	185

Sources: As for table 12.

Table 14.

Public education expenditure as per cent of GNP under alternative projections of population, enrolment ratios, and pupil-teacher ratios

Country	Enrolment ratio and pupil-teacher ratio assumption	Population projection	Number of years after start of projection			
			0	10	20	30
Republic of Korea (1965)	Constant	High	5.4	5.7	5.9	6.2
		Low	5.4	4.6	3.4	—
		High/Low	100	124	174	—
	Improving	High	5.4	9.0	12.1	15.4
		Low	5.4	7.6	7.8	—
		High/Low	100	118	155	—
Thailand (1970)	Constant	High	3.77	3.82	3.59	3.34
		Low	3.77	3.59	2.86	2.50
		High/Low	100	106	126	134
	Improving	High	3.77	4.49	4.91	4.92
		Low	3.77	4.12	3.96	3.73
		High/Low	100	109	124	132
Pakistan (1960)	Constant	High	1.00	1.21	1.31	1.44
		Low	1.00	1.21	1.15	1.04
		High/Low	100	100	114	138
	Improving	High	1.00	3.24	5.45	8.65
		Low	1.00	3.19	5.03	6.90
		High/Low	100	102	108	125

Sources : As for table 12.

Table 15.

Capital education expenditure as percentage of total education expenditure under alternative projections, of population, enrolment ratios, and pupil-teacher ratios

Country	Enrolment ratio and pupil-teacher ratio assumption	Population projection	Number of years after start of projection			
			0	10	20	30
Republic of Korea (1965)	Constant	High	14.8	17.5	22.0	24.2
		Low	14.8	4.3	0.0	—
	Improving	High	14.8	21.1	19.0	17.5
		Low	14.8	11.8	12.8	—
Thailand (1970)	Constant	High	23.1	13.4	11.1	9.9
		Low	23.1	9.7	3.5	3.2
	Improving	High	23.1	20.5	16.9	15.0
		Low	23.1	18.0	10.4	9.4
Pakistan (1960)	Constant	High	9.0	11.6	16.0	15.3
		Low	9.0	9.1	6.1	2.9
	Improving	High	9.0	21.0	18.7	13.3
		Low	9.0	19.4	11.9	6.1

Sources : As for table 12.

shown in table 14. In the Republic of Korea, the proportion of GNP devoted to education under the high fertility and high ER and PTR projection. exceeds 9.0 per cent after 10 years, and in Pakistan it exceeds 8 per cent after 30 years. In the case of high fertility, the actual attainment of the projected improvements in ERs and PTRs is an unlikely possibility, since no country in the world devotes as much as 9 per cent of GNP to public education. On the other hand, in the low fertility projection, the percentage of GNP necessary to achieve the postulated ER and PTR improvements is always less than 8 per cent. Population growth becomes a crucial factor because educational expenditures are close to their maximum feasible levels.

Table 15 shows capital educational expenditure (primarily for expansion of plant, equipment and personnel) as a percentage of total education expenditure under the different projections. After 10 years in the Republic of Korea and after 20 years in Thailand and Pakistan, this percentage is considerably lower for the low than for the high fertility projection. Hence, lower fertility not only reduces percentage of GNP spent on education (table 14) but also increases the proportion of educational expenditure that can be devoted to day-to-day recurring costs. If the money thus saved on capital costs is put back into education, it can be used to upgrade the quality of instruction (the projections of costs in table 14 and 15 all assume a constant quality of instruction over the 30-year period, so that cost estimates are probably conservative).

Educational development, as well as being affected by population change, has important reciprocal effects on fertility. It reduces fertility by lessening and eventually eliminating the net economic benefits of children, by encouraging a later age at marriage and by providing new aspirations and work roles that compete with mothers' and fathers' aspirations and roles as parents (especially important in the case of mothers).

Fertility differentials by educational level are typically quite large. In India in 1960-1961, for example, among women 47 years and over with unbroken marriages, illiterate women or women with only primary education had an average of 6.6 children; those with middle school education, 5.0; those with high school education, 4.6; and those with some university education, 2.0.[14] Since educational change is interrelated with a whole complex of socio-economic changes, it is difficult to say how much of fertility differentials by educational level are due to education itself and how much to other

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[14] *National Sample Survey, Sixteenth Round, July 1960-June 1961: Tables with Notes on Family Planning* (Calcutta: Indian Statistical Institute, 1964).

Table 16.

Projections of the number of households and of household size, 1970-1980 (medium variant)

	High—fertility countries[a]	Japan	Australia New Zealand	Total ECAFE	Western Europe
Number of households (000)					
1970	361,856	28,297	4,375	394,528	50,040
1980	476,988	37,704	5,628	520,320	55,450
Percentage increase	31.8	33.2	28.6	31.9	10.8
Household size					
1970	5.18	3.66	3.51	5.05	2.97
1980	4.95	3.09	3.34	4.80	2.85
Percentage decrease	4.4	15.6	4.8	5.0	4.0

Source : Calculated from "Analysis and projections of households and families" (ESA/P/WP.28/Rev.1), table 6.

[a] For country composition of categories, see note [a] to table 8. The three Asian subregions are aggregated because the detailed data necessary to present them separately were not available during the preparation of the paper.

socio-economic factors correlated with it; but one recent study showed that educational level accounted for over one-half the total variance in fertility between a large number of countries at various stages of demographic transition, and four times more than all other variables included in the study combined.[15] Such findings suggest that an educational policy of rapidly expanding enrolment ratios, for girls as well as boys, is sound population policy as well as development policy.

IV. POPULATION, HOUSEHOLDS AND HOUSING DEVELOPMENT

Between 1970 and 1980, housing requirements in the ECAFE region will grow even faster than population due to declines in the average number of persons per household.[15-A] In the three high-fertility ECAFE subregions combined, the number of households is projected to increase by 31.8 per cent, as shown in table 16. In Japan, the increase is even larger (33.2 per cent), in spite of a slower rate of population growth, because of a very large (15.6 per cent) decline in average household size (the present rate of housing construction considerably exceeds the rate of population growth). The number of households in the Australia-New Zealand subregion is projected to increase by 28.6 per cent, also very substantial, whereas for western Europe, in comparison, it is projected to increase by only 10.8 per cent. When the need to upgrade the poor condition of much existing housing is taken into account, the housing needs of many high-fertility ECAFE countries are enormous. Except for Hong Kong and Singapore, the housing situation in these countries, already very bad, is generally deteriorating at the present time. The situation is especially serious in urban areas due to the pressures not only of rapid natural increase but also of rural-urban migration and higher land and construction costs. In some metropolitan areas as much as one-third of the population are squatters.[16]

Because of the uneven availability and quality of housing data, it is difficult to draw up tables detailing the relation between housing development and population growth by region at a given point in time. As an alternative to such tables, illustrative data, taken from a recent ECAFE report,[17] are presented for individual countries for which recent data are available.

A. Countries with continuing high fertility

Afghanistan : Information is restricted mainly to the capital city, Kabul. Around 1969, the average number of persons per dwelling in Kabul was 12.8. The annual housing construction requirement was 4,500 units for population increase and 2,500 for replacement, compared with a total housing stock of 39,000. As against the total of 7,000 new units needed annually, only 1,200 to 1,500 units were being constructed.

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[15] Bogue, D.J., *Principles of Demography* (New York: John Wiley, 1968), p. 676.

[15-A] According to "Principles andr ecommendations for the 1970 population censuses" (United Nations Statistical Papers, Series M, No. 44), p. 33, a household is defined as either (a) a one-person household, consisting of one person who makes provision for his own food or other essentials of living without combining with any other person to form a multiperson household, or (b) a multiperson household, consisting of a group of two or more persons who make common provision for food or other essentials of living. Household members may or may not be related. A household is not to be confused with a dwelling unit, since two or more households may share a dwelling unit originally intended for a single household.

[16] 1967 *Report on the World Social Situation* (United Nations publication, Sales No. : E. 68. IV. 9), p. 119.

[17] "Review of the housing situation in the ECAFE region" (Committee on Industry and Natural Resources, Sub-Committee on Housing, Building, and Planning, ninth session, Bangkok, July 1969).

India : The urban housing shortage was estimated at 9.3 million units in 1960/61 and 11.9 million in 1969. The rural housing deficit in 1966 was estimated at 60 million units. To wipe out the 1966 rural deficit alone, over a period of 25 years, would require construction of 2.4 million units per year. In addition, between 1966 and 1976, rural population increase by itself will call for an average of 2.2 million units per year (at five persons per unit). In contrast to this need, less than 350,000 units per year were constructed over the period 1961-1966 (0.66 units per thousand population) in both rural and urban areas combined.

Iran : Around 1969, in order merely to house the increase in population of about 3 per cent per year, some 6 units per thousand population needed to be constructed each year (assuming five persons per unit). In contrast, actual construction was 3.3 units per thousand population during 1961-1966 and about 3.6 units per thousand population during 1966-1971.

Pakistan : The second five-year plan (1960-1965) focused on urban housing needs. The urban housing deficit was estimated at 600,000 units and the five-year need due to population increase at 500,000. Against this total need of 1.1 million units, only 150,000 had been built by the end of 1965. During the third plan (1965-1970), the accumulated backlog of 950,000 plus the new projected need of 600,000 units due to population increase gave a new estimated five-year total need of 1.55 million. The Planning Commission, handicapped by available funds, was only able to recommend the construction of 292,500 units in response to this need, 80,000 by the Government and the rest by the private sector. Actual performance probably has fallen considerably short of these modest goals, since between 1960 and 1965, the private sector built less than 50,000 units in urban areas, most of them for upper-income groups. Most of the population is outside the housing market because of insufficient income.

Philippines : In 1960, it was estimated that, between 1960 and 1980, 9.43 million dwelling units needed to be constructed, of which 5.79 million were due to trends in population and average household size. This amounts to about 12 new dwellings per thousand population per year and an annual investment of about 5.7 per cent of GNP. In contrast to this need, investment in housing was only about 1.5 per cent of GNP in 1965. It jumped to 2.8 per cent in 1967, but much of this increase was devoted to housing construction for higher-income groups and hence had little effect on the housing situation for the mass of the population.

B. Countries and areas with high but declining fertility

Sri Lanka (Ceylon) : In 1962, the urban housing deficit was estimated at 120,000 units, compared with an existing stock of 228,000 units; and the additional units needed between 1962 and 1972 due to population increase and replacement, at 87,000. At a rate of construction running around 1,200 units a year, the urban deficit had by 1972 increased by approximately another 75,000 units, to a total of 195,000 units.

Republic of Korea : In the late 1960s, estimated housing construction was about 80,000 units a year compared with the estimated requirement of 100,000 per year from population increase alone.

Hong Kong and Singapore : These are the only countries in the region that have successfully tackled the housing problem over the past decade. In both cases the Government has played a predominant role, given that private housing investment had been low, catering mainly for middle and high-income groups.

C. Japan

Economic prosperity has recently been accompanied by a rate of housing construction (around 10 units per thousand population) that considerably exceeds population growth, but rapid urban population increase has still posed problems because of the shortage of dwelling sites and the consequent steep rise in land prices.

D. Australia and New Zealand

These two countries have satisfactory housing situations with no shortages in spite of rapid rates of population growth.

Rapid population growth in developing countries has a much more deleterious effect on housing investment than on other types of investment, because, with investment funds in short supply due to low savings rates, Governments are naturally loath to put much money into such relatively unproductive investments as housing. Housing construction requires a large volume of capital and is characterized by high capital-output ratios so that, in a sense, it is a luxury that developing countries cannot very well afford. In fact, the cases of Hong Kong, and Singapore, as well as the past cases of postwar Japan, the USSR and eastern Europe, suggest that the temporary sacrifice of housing construction in favour of more productive investments (not only in industry and trade but also in education) may have the advantage of accelerating not only economic development but also fertility decline. In a modernizing economy, the effective seizure by individuals of the new opportunities to get ahead requires much deferred gratification in terms of initially expensive investments, whether these be in expansion of a business or in education and training for oneself and one's children; and, in this situation, the high housing costs that accompany housing shortage may add considerably to the incentive to restrict family size. In the long run, then, the starving of the housing sector until economic take-off has been achieved may often be the best policy.

Although reduced rates of population growth would clearly do a great deal to alleviate the housing problem in the less developed ECAFE countries, it should be noted that other means of improving the housing situation are also possible within the framework of restricted funds for housing investment. Within a given allocation, architects and engineers can no doubt augment the supply of housing by reducing costs through improved designs, use of cheap yet qualitatively satisfactory materials and better organization.[18]

V. POPULATION CHANGE AND HEALTH DEVELOPMENT

In spite of the fact that the introduction from the developed nations of cheap public health techniques (e.g. malaria eradication and water purification) has brought about a very rapid decline in mortality since the Second World War in the developing parts of the ECAFE region, the level of health services *per capita* remains very low. This fact is illustrated by table 17, which shows that available *per capita* medical services of doctors and hospital beds in the high fertility part of the ECAFE region are less than 25 per cent of their levels in western Europe. The situation is actually worse than the numerical figures indicate because deficiencies in modern equipment and supplies mean that the effectiveness of a doctor or hospital bed is also less than in western Europe.

Further declines in death rates in the less developed ECAFE countries will depend a great deal on raising these low levels of services. As in the case of education and housing, rapid population growth retards such a development because it requires disproportionately large investments in the quantitative expansion, rather than the qualitative improvement, of the health system. Table 18 shows just how fast this expansion must be in the presence of both rapid population growth and improvement in levels of service. Table 18 examines projections for India between 1966 and 1981 and Pakistan between 1965 and 1985 (official targets are used in the latter case). In India, after 15 years, the quantitative requirements for health services are 49 per cent higher in the high fertility projection and 41 per cent higher in the effective family planning projection than in the purely hypothetical zero population growth projection. The disadvantage of high fertility compared with effective family planning is only 6 per cent. In Pakistan, after 20 years, the requirements are 82 per cent higher in the high fertility projection and 59 per cent higher in the effective family planning projection than in the zero population growth projection, and the disadvantage of high fertility compared with effective family planning is 14 per cent. As in the cases considered earlier of *per capita* income and education, the advantages of declining fertility over high fertility are rather modest in the short run but rapidly become larger after 10 to 20 years. This point is further borne out by a 30-year projection study of the Philippines, which, allowing for an increase in *per capita* health expenditures, showed a ratio of health costs in the high population projection to those in the low projection of 4.1 per cent, 16.3 per cent, and 38.4 per cent after 10, 20 and 30 years respectively.[19]

The qualitative improvement of health services combined with rapid population growth usually increases required health expenditures as a proportion of GNP, since under these conditions the volume of health services normally grows faster than GNP. In Sri Lanka (Ceylon), for example, 30-year projections between 1968 and 1998 show that the proportion of GNP required for public health services is about 25 per cent less in the declining fertility projection than in the high fertility projection.[20] This of course does not mean that if high fertility persists the proportion of GNP devoted to health will actually increase to the required levels. On the contrary, the proportion of GNP devoted to health may very well expand more slowly than in the case of declining fertility, due to lower savings rates and to increased competing demands for funds for education, housing, etc. The facts bear out that, once a nation is on the road of sustained economic development and fertility decline, the percentage of GNP devoted to health, education, housing, and other social services rises rapidly.

Health development is compromised by rapid population growth, not only directly by the necessarily rapid quantitative expansion of health services but also indirectly by the retarding effects on economic development generally and on improvements in housing and nutrition in particular. The factor of increasing population density itself on health, although it undoubtedly has some effect, appears to play a lesser role, given that some of the most densely populated areas of the world enjoy very high levels of health (the Netherlands, for example).

In addition to rapid population growth, migration of medical personnel is also a very serious problem for

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[18] Ibid., p. 59.

[19] Ruprecht, T.K. and Wahren, C., *Population Programmes and Economic and Social Development* (Paris, OECD, 1970), p. 37.

[20] Jones, G. and Selvaratnam, S., "The effect of a decline in fertility on the cost of public health care in Ceylon", September 1970, mimeo.

Table 17.

Physicians and hospital beds per 100,000 population,[a] 1966[b]

	Countries with continuing high fertility	Countries with high but declining fertility	Japan	Australia New Zealand	Total ECAFE	Western Europe
Physicians	19	38	110	125	30	163
Beds	68	153	1,144	1,179	187	1,073

Note : Omitted from the calculation of this table due to unavailability of data are Khmer Republic and Papua New Guinea; People's Republic of China, Democratic People's Republic of Korea, Democratic Republic of Viet-Nam; France, Liechtenstein, Luxembourg, Monaco, and Netherlands. The number of doctors in Fiji in 1966 was obtained by interpolating the figures for 1965 and 1967. The number of beds in Indonesia in 1966 was obtained by interpolating the figures for 1965 and 1968.

Source : Calculated from individual country data in *Statistical Yearbook* 1968, 1969, 1970 (United Nations publications, Sales Nos. : E./F. 69. XVII.1, E/F.70.XVII.1., E/F.71.XVII.1), and *Statistical Yearbook for Asia and the Far East* 1969 (United Nations publication, Sales No. : E/F.70. II.F 8).

[a] Figures in this table are approximate. Different sources sometimes give different figures for the same country, and, in this case, the figure in the more recent publication was used. Furthermore, many of the data refer only to registered physicians, many of whom in reality may be working outside the country.

[b] 1966 was taken instead of a later year in order to avoid excluding India, for which 1966 was the latest year available.

Table 18.

Indices of health service requirements, India 1966-1981 and Pakistan 1965-1985

	Service ratio (per 100,000 population)	Actual number of doctors, etc., at start of projection period (index = 100)	*Number at End of Projection Period*					
			Zero population growth (purely hypothetical)	No fertility change	Effective family planning	(4)/(3)	(5)/(3)	(4)/(5)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
India (1966-1981)								
Docters								
1966 service ratio	21	100	100	149	141	149	141	1.06
1981 service goal	50	100	238	354	336	149	141	1.06
Nurses								
1966 service ratio	12	100	100	149	141	149	141	1.06
1981 service goal	50	100	417	620	588	149	141	1.06
Hospital beds								
1966 service ratio	59	100	100	149	141	149	141	1.06
1981 service goal	100	100	169	252	239	149	141	1.06
Pakistan (1965-1985)								
Doctors								
1965 service ratio	16	100	100	182	159	1.82	1.59	1.14
1985 service goal	33[a]	100	206	374	327	1.82	1.59	1.14
Nurses								
1965 service ratio	7	100	100	182	159	1.82	1.59	1.14
1985 service goal	20[a]	100	286	520[b]	455[b]	1.82	1.59	1.14
Hospital beds								
1965 service ratio	35	100	100	182	159	1.82	1.59	1.14
1985 service goal	100[a]	100	286	520	455	1.82	1.59	1.14

Source : Calculated from data in Corsa, L. and Oakley, D., "Consequences of population growth for health service in less developed countries—an initial appraisal", in National Academy of Sciences, *Rapid Population Growth* (Baltimore, Md. : Johns Hopkins University Press, 1971), pp. 394-396.

[a] Actual goals.

[b] Corrected values of what appear to be errors in the original table.

health development in many of the less developed ECAFE countries. There are two aspects to this problem, one concerns internal migration of personnel; the other, international migration. Internally, doctors tend to concentrate in cities, where facilities are better and people are better able to pay. In Thailand, for example, there is one doctor per 1,000 population in Bangkok, but only one doctor per 30,000 population outside of Bangkok. Outside both Bangkok and the provincial capitals, there is only one doctor per 150,000 population.[21] This maldistribution of medical service means that the bulk of the population is receiving a much lower level of care than the national averages of *per capita* service would indicate.

International migration of doctors, especially out of the Commonwealth-associated countries of India, Pakistan and Sri Lanka (Ceylon), is also a very serious problem. Because of the shortage of doctors in the United Kingdom, the United States, and a few other developed countries, large numbers of foreign doctors, many of whom completed part of their training in one of these countries, end up by either staying or migrating there. In the United Kingdom in 1966, for example, at least 11,000 out of a total of about 63,000 doctors were from Commonwealth nations.[22] The home country in this case is a double loser, since it is not only still minus one doctor but has paid partly or totally to train him. An increase in the proportion of medical personnel trained in the home country, combined with exit restrictions on medical personnel, may in some cases be desirable to combat this problem.

The above discussion has focused on the effects of population change on health development, but an equally interesting question is the effects of health investment itself on population growth. Recently a great deal has been said about the desirability of health investments to reduce infant mortality, with part of the justification being the attendant decline in the birth rate. The argument is that, with the greater part of infants surviving to adulthood, couples will cut down on fertility in order to achieve the same ultimate surviving family size, thereby still assuring themselves of security in the form of children in their old age. This argument is valid, but it should not be construed to mean that such health investments will decrease the rate of population growth. Actually the reverse is probably true, at least in the short run. The declines in the crude birth rate induced by declines in infant mortality are almost certainly smaller than the declines induced in the crude death rate itself, so that population growth probably accelerates. This is a question that needs to be studied further.

The crucial question here is how much of scarce investment funds should be put into health services. The best policy may well be to plan for slow improvement in health services and to concentrate investment where the payoff in economic development and fertility decline is apt to be larger. From a humanitarian point of view there is no question that levels of health should be improved as rapidly as possible; but economic development, educational development and improvement in other social services are also desirable from a humanitarian point of view, so that, especially in the context of rapid population growth, over-all betterment of the human condition may be better served by going relatively slowly on health investments.

VI. POPULATION CHANGE, FOOD SUPPLY AND NUTRITION

It has been shown that the high-fertility Asian regions are characterized by very high and rapidly increasing rural and overall population densities. This demographic situation corresponds to levels of undernutrition and malnutrition that exceed those of any other major world region.[23]

Table 19 shows projected calorie and protein supplies for selected high-fertility ECAFE countries. Only West Malaysia shows 1962 levels of average daily calorie intake above minimal requirement for satisfactory health. The table indicates that, by 1985, all countries in the region, except the Philippines, will exceed minimum average daily calorie requirements, and all countries except the Philippines, Thailand and Sri Lanka (Ceylon) will exceed minimum average daily protein requirements. The Philippines population is growing faster than that of any other country in the ECAFE region.

Although most countries in the region are projected to exceed minimal average calorie and protein requirements by 1985, the unequal distribution of food supplies makes the food situation much more serious than the averages in Table 19 indicate. In fact, with average nutritional levels close to the minimum for satisfactory health, the lower classes, especially lower-class families with large numbers of children, can still be expected to suffer from a high incidence of undernutrition and malnutrition in 1985. Because of their high nutritional needs for growth, children are the first to suffer from malnutrition; and numerous country studies in the region have in fact shown that, when the family diet as a whole appears on average to be at a satisfactory though minimum level, the protien and calorie requirements of

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[21] *Population Growth in Thailand* (Bangkok: National Economic Development Board of Thailand, 1970) p. 33.

[22] Gillon, J.J. and du Guerny, J., "L'estimation des besoins en medecins. Etudes etrangeres", *Bulletin de l'Institut National de la Sante et Recherche Medicale*, vol. 22, No. 6, 1967, p. 1300; *Statistical Yearbook* 1968, *op. cit.*, table 206.

[23] *Indicative World Plan for Agricultural Development to* 1975 *and* 1985, *Provisional Regional Study No.* 4, *Asia and the Far East*, vol. 1 (Rome, FAO, 1968), p. 50.

Table 19.

Projected calorie and protein supplies, 1975 and 1985

		Total calories (per day)	Total calories as % of requirements[a]	Total proteins (grams per day)	Total proteins as % of requirements[a]	Animal proteins as % of total proteins	Protein calories as % of total calories
Countries with continuing high fertility							
India	1961-1963	1,975	90	52.2	86	10	10.6
	1975	2,210	100	57.2	97	10	10.4
	1985	2,475	112	62.5	106	10	10.1
Pakistan	1961-1963	1,940	85	46.5	87	19	9.6
	1975	2,120	93	50.0	94	19	9.4
	1985	2,325	102	54.1	101	18	9.3
Philippines	1961-1963	1,875	87	43.8	85	32	9.3
	1975	1,955	91	45.3	88	32	9.3
	1985	2,105	98	47.4	92	31	9.0
Thailand	1961-1963	2,125	97	46.5	89	23	8.7
	1975	2,280	105	50.2	96	26	8.8
	1985	2,350	108	51.9	99	30	8.8
West Malaysia	1961-1963	2,335	105	52.1	94	29	8.9
	1975	2,525	114	54.2	100	27	8.6
	1985	2,570	116	54.2	101	29	8.4
Countries with high but declining fertility							
Republic of Korea	1961-1963	2,210	98	64.3	96	9	11.6
	1975	2,420	108	73.1	110	12	12.1
	1985	2,400	107	73.7	108	13	12.3
Sri Lanka (Ceylon)	1961-1963	2,050	94	44.8	84	19	8.7
	1975	2,270	104	48.6	89	18	8.5
	1985	2,450	112	51.5	96	18	8.4
Western Europe	1970	3,051	119	88.6	117	55	11.6

Source : Data for Western Europe 1970 were taken from *Agricultural Commodity Projections* 1970-1980 (Rome. FAO 1971), Vol. 1, p. 57. The rest of the data were taken from *Indicative World Plan for Agricultural Development to* 1975 *and* 1985, *Provisional Regional Study No.* 4, *Asia and the Far East* (Rome; FAO 1968), pp. 66, 69. Calorie and protein standards were taken from the latter source.

[a] In the FAO 1970-1980 commodity projections, the calorie and protein requirements have been revised. Calorie revisions are not large, but protein revisions reduce considerably the level of requirements, giving a very different picture of protein deficiency from that presented in the above table.

Table 20.

Percentage of increase in food demand between 1965 and 1985 due to population growth[a]

GDP growth assumption	Population growth assumption[b]	Far East[c]	Asian centrally planned economies[d]	Japan	Oceania	Western Europe
Low	High	80	75	41	96	51
	Low	77	63	36	94	44
High	High	61	60	30	92	40
	Low	65	50	26	90	34

Source: Calculated from *Agricultural Commodity Projections for* 1975-1985 (Rome: FAO, 1967) vol. 1, p. 34, table 5.

[a] Remainder is due to growth in *per capita* income.

[b] Only one medium population projection is used for the period 1965-1975. Alternative high and low population projections are used for the 1975-1985 segment of the overall 1965-1985 period.

[c] Includes Sri Lanka (Ceylon), India, Pakistan, Philippines, Republic of Korea, Thailand, West Malaysia.

[d] Includes People's Republic of China, Democratic People's Republic of Korea, Democratic Republic of Viet-Nam, and Mongolia.

children are only 70 to 80 per cent adequate.[26] The problem is serious because malnutrition can result in permanent mental as well as physical retardation of growing children, the generations on whom future social and economic progress will depend.

In five of the eight high-fertility countries, increases in protein supplies are projected to lag behind increases in total calorie supplies, with the result that the protein: calorie balance of the diet will deteriorate. Even by 1985, five of the eight countries are expected to have unsatisfactory protein: calorie ratios (less than 10 per cent). This is perhaps an inevitable stage of development, since cereals, which have a lower protein content than foods of animal origin, provide the major source of calories in developing countries. It is only after adequate calorie supplies have been provided that more food supplies are available for livestock. Pulses are the main source of vegetable protein in the region, but so far they have not been significantly affected by the "green revolution". It may well be, however, that, in some countries, particularly India, vegetable proteins are a more feasible way of eliminating protein deficiencies than animal proteins, since a given amount of animal protein requires five to eight times the amount of land to produce than an equivalent amount of vegetable protein.[27] That such a reliance on vegetable protein is possible, is illustrated by the Republic of Korea (table 19), whose comparatively high protein consumption reflects a very low ratio of animal protein to vegetable protein. Fish constitute an important source of protein in Bangladesh and much of east Asia, but it is doubtful whether fish production can be expanded fast enough to meet the demand for this protein source. An increasing fish deficit is expected throughout the region, with the proportion of supply to demand projected to drop from 90 per cent in 1975 to 70 per cent in 1985.[28]

Table 20 shows that, in the ECAFE subregions where population is growing rapidly, projected increases in population are expected to account for well over one-half of the increase in food demand between 1965 and 1985. In Japan and western Europe, in contrast, growth in *per capita* income will account for over one-half of the increase in food demand.

Table 21 shows the growth in food demand itself for the same countries over the same period. Both tables 20 and 21 show that variation of the population assumption affects food demand much less than variation of the economic growth assumption. Given that high and low population variants are introduced into these projections only after 1975, the small population effect is not surprising. We have already seen from the earlier analysis of how rapid population growth affects *per capita* income, education and health development, that the population

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[26] McRoberts, M., "Food resources of Asian countries in the 1970s", *Population '70: Proceedings of the Second Conference of the Western Pacific Region of the International Planned Parenthood Federation*, p. 22.

[27] See "Population change, food supply and nutrition", in part II of this report.

[28] McRoberts, *op. cit.*, p. 26.

Table 21.

Index of food demand in 1985 (1965 = 100)

GDP growth assumption	Population growth assumption[a]	Far East[b]	Asian centrally planned economies[c]	Japan	Oceania	Western Europe
Low	High	180	170	151	144	123
	Low	177	164	150	139	121
High	High	217	193	175	146	131
	Low	213	186	172	139	128

Source : Calculated from *Agricultural Commodity Projections, op. cit.*

[a] Only one medium population projection is used for the period 1965-1975. Alternative high and low population projections are used for the 1975-1985 segment of the overall 1965-1985 period.

[b] Includes Sri Lanka (Ceylon), India, Pakistan, Philippines, Republic of Korea, Thailand, West Malaysia.

[c] Includes People's Republic of China, Democratic People's Republic of Korea, Democratic Republic of Viet-Nam, and Mongolia.

effects after 10 years are small. Food demand projections are not available past 1985, but it should be kept in mind that, after 15 years or so, the divergence in food demand between high and low projections would be rapid. Again the effects of fertility decline are small in the short run but increase rapidly in the long run, so that the long-run costs of delaying fertility decline are large.

Even though the effects of varying the population assumption are small over the period examined, nevertheless the small differences are significant for two reasons. First, a large proportion of the population is close to the borderline of adequate nutrition. Secondly, because of the predominant role of agriculture in the economies of many ECAFE countries, even relatively small changes in food demand or in food imports can have serious economic consequences. In Thailand, for example, foreign exchange gained from agricultural exports (mainly rice) are an important source of investment funds. Yet, if Thailand's very rapid rate of population growth does not significantly decline in the next decade or so, the country could eventually very well repeat the experience of India, which in this century changed from a food exporter to a food importer. Although improvements in food supply and nutrition can be expected to lower death rates further and thereby to accelerate population growth (other things being equal), nevertheless the overriding economic importance of agriculture in the high-fertility ECAFE countries makes it a high priority area in terms of development.

VII. POPULATION CHANGE AND TRANSPORT AND COMMUNICATIONS DEVELOPMENT

A. Transport

The demand for transport is a derived demand, depending for the most part on the level of economic development. In the early stages of development, the growth rate of transport requirements is usually higher than that of GNP because of the increased movement of heavy goods that accompanies the early stages of industrialization, and the enlarged radius of the market that accompanies increased specialization. In developing countries, the growth rate of the transport sector is often two to three times the growth rate of total GNP. In the less developed countries of the ECAFE region, transport development usually rates first or second among the items included in development plans, and it absorbs between 20 and 35 per cent of total planned development expenditure. At later stages of development, on the other hand, the provision of services, as compared with the production of goods, becomes relatively more important in GNP, so that the growth of transport services is usually slower than the growth of GNP.[27]

The expansion of the transport system, especially the elaboration of the rail and road networks, builds in a great deal of over-capacity at the initial stages of development. This is especially true of feeder roads and rail spurlines, where the volume of traffic is very low, but which are necessary to achieve a geographically balanced development and to exploit efficiently the resources of the more isolated areas. Because of this initial over-capacity, transport requirements are not much affected in the short run by the rate of population growth. Transport expenditures, on the other hand, may be considerably affected, because the swelled demand for development funds in education, housing, health, etc., competes more seriously with the large capital requirements for road and rail building, and to a lesser extent, port and airport building. Hence, the short-run effect of rapid population growth on transport development is for the most part indirect, through the decreased availability of investment funds for this sector.

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[27] *Introduction to Transport Planning* (United Nations publication, Sales No. : 67.II.F.13), pp. 1, 14, 19.

The above observations apply mainly to the transport of goods. In the case of passenger transport, the most serious effects of rapid population growth are found in urban areas, which are characterized not only by rapid natural increase but also by rapid rural-urban migration and often rapidly rising *per capita* income. Since automobile ownership depends closely on *per capita* income, this combination of demographic change and economic development means that the number of automobiles mushrooms even faster than urban population. Already the traffic problems of some Asian cities, such as Bangkok, not to mention Japanese cities, appear to be as bad as those of some American and European cities of comparable size. With city budgets strained simply to extend basic city services to a constant flood of new residents, investment funds for the development of modern efficient means of mass transportation are difficult to find. Nevertheless, if the initial capital outlays for a modern mass transportation system can be managed, great savings may be realized in the long run.

Eventually the high and rapidly increasing population densities that obtain in most developing ECAFE countries (see tables 1 and 4) may very well mean that passenger transport by private automobile on the American and European models will prove unrealistic. Traffic congestion and concomitant air and noise pollution is already reaching intolerable levels in the major metropolitan areas of the United States, western Europe and Japan. In developing Asia, with its high potential for further urbanization and economic development, as well as continued rapid population growth, western standards of *per capita* car ownership imply unprecedented levels of traffic congestion, pollution and petroleum resource consumption. A stronger reliance on public mass transport than has been the case in the United States and western Europe seems inevitable.

B. Communications

As in the case of transport, in its initial stages communications development builds a good deal of overcapacity into the system, so that communications requirements are also relatively insensitive to the rate of population growth in the short run. In fact, in the case of radio and television broadcasting, certain economies may be realized with increased population density. The main effects of rapid population growth on communications development would appear to be (*a*) the restriction of investment funds due to low savings rates and high competing investment demands in other areas, and (*b*) the slowed growth in *per capita* income, which, in turn, slows growth in *per capita* ownership of radio and television receivers. Telephones *per capita* are highly correlated with *per capita* income (regressions of these two variables are often used to project telephone needs), so that growth in telephones *per capita* is also indirectly retarded by rapid population growth via reduced growth in *per capita* income.[28]

In the case of the telephone network, for which a good deal of investment goes into the linkage of individual households and businesses into the network, investments depend more directly on population growth. Under conditions of rapid growth, private household service may have to be starved in order that the business and government sector be adequately served. In the developing countries in 1970, about 90 per cent of telephone services were in fact consumed by business and government.[29]

C. Effect of transport and communications development on population change

Although, in the short run, transport development probably accelerates population growth through improved penetration of medical services into remote areas, it also fosters modernization and mobility, both of which in the longer run tend to reduce fertility. Communications development can also be effective in introducing into these areas the modern aspirations and life styles associated with lower fertility. It appears likely that the fairly advanced state of transport and communications in the rural areas of the Republic of Korea has played a role in the drop in the birth rate there over the past few years.

The influence of a good transport system on the diffusion of family planning information is illustrated by the opening in Bangkok of Thailand's first major family planning clinic in January 1965. There was no advertising of the programme (news of it travelled almost solely by word-of-mouth), yet the first year's acceptors included women from 54 of Thailand's 71 provinces.[30] The geographical mobility fostered by Thailand's public transport system, which is advanced for the country's level of economic development, undoubtedly figured importantly in the large geographical radius of the programme's influence.

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[28] *Economic Studies at the National Level in the Field of Telecommunications (1964-1968)* (Geneva : International Telegraph and Telephone Consultative Committee, 1968), ch. 3, p. 16.

[29] "Development of priorities and targets for the Second Development Decade and their implementation", (ECAFE, Transport and Communications Committee, Telecommunication Subcommittee, second session, November 1970), p. 3.

VIII. POPULATION CHANGE, SOCIAL DEPENDENCY, AND SOCIAL SECURITY

Rapid population growth is accompanied by an increase in the total dependency burden, some of the consequences of which have already been discussed in sections 1 and 3. When broken down, the increase in total dependency under rapid population growth, as compared with slow population growth, consists of a large increase in young-age dependency that is partially offset by a smaller decrease in old-age dependency. This is shown in table 22.

The effect of these trends in dependency on the development of a social security system is not immediately obvious. On the one hand, since social security programmes benefit primarily those over age 15, the low old-age dependency ratios under rapid population growth would seem to facilitate the development of social security programmes (although medical benefits under social security generally apply to persons of all ages, benefits for maternity, employment injury, unemployment, invalidity, old age and survivorship are restricted to the working and old ages). On the other hand, as seen above, the high young-age and total dependency burdens and the rapid population growth associated with them result in low savings rates and high competing demands for investment in other areas.

On balance, the development of social security programmes appears to be retarded by rapid population growth, and in the ECAFE region, this conclusion is buttressed by the fact that no country has put into effect extensive social security programmes until the related processes of economic development and fertility decline were well underway. Australia, New Zealand and Japan are the only countries with well-developed social security systems. Singapore, in spite of its very rapid economic advances and fertility declines over the past decade, still has only a very marginal social security programme in force. The Republic of Korea and Thailand, which like Singapore also enjoyed rapid economic growth during the 1960s, have no social security provisions except for employment injury compensation.[31] Some other countries, such as Iran, have ambitious social security legislation on the books but coverage that is limited in practice due to insufficient funds.[32]

It is often hypothesized that social security programmes should play an important role in any government programme to reduce fertility, because, in the absence of such programmes, parents must rely on a large family to support them in their old age. Yet in none of the developing countries and areas in which fertility has declined rapidly over the past decade, including Hong Kong, Singapore and the Republic of Korea, is a social security programme large enough to have affected fertility significantly. Even in most developed countries today, the government social security component of old-age income is often small and does not seem to have a strong determining effect on fertility. It appears that the development of social security programmes, although they undoubtedly accelerate fertility decline, have relatively small effects compared to other social changes relating to economic development and modernization. In fact, the causation seems to run at least as much in the reverse direction. As family size declines and parent survivorship continues to improve, the burden that economically inactive parents are on their children increases, so that the need grows for the State to assume part of this burden. If the ratio of benefits (in terms of fertility reduction) to costs of social security programmes is indeed small (the question needs to be studied), then, in view of the large financial and administrative requirements of such programmes, the best policy may be to divert only a minimum of scarce investment funds to them until economic take off is well underway.

Given that family planning surveys show old-age security to be a frequently mentioned reason for continuing the traditional pattern of large families, research needs to be done on why fertility is declining anyway in many countries that are developing rapidly economically, but where social security programmes are still in their infancy. It may well be that in the context of reduced economic value of younger children and weakened traditional obligations of older children toward parents, parents come to view the gain in personal savings due to smaller family size as more than offsetting the losses in old-age support from grown children. Studies need to be done of how parents, in countries at different stages of economic development and demographic transition, break down their anticipated old-age income into inheritance, personal savings and investment income, private pension plans, Government social security, and support from grown children.

It should be noted that social security programmes could contribute more effectively to fertility decline if Governments took care to remove pro-natalist elements from them. In the case of maternity benefits, for example,

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[30] Fawcett, J.T., *et al.*, "Thailand : An analysis of time and distance factors at an IUD clinic in Bangkok", *Studies in Family Planning*, No. 19, May 1967, p. 8.

[31] *Social Security Programs throughout the World*, 1969 (Washington, United States Department of Health, Education and Welfare, 1970).

[32] *Social Security in Asia: Trends and Problems*, Sixth Asian Regional Conference, (Geneva: ILO, 1968).

Table 22.

Dependency ratios in the ECAFE region, 1970-1980 (medium projection)

	Countries with continuing high fertility	Countries with high but declining fertility	People's Republic of China, Democratic People's Republic of Korea, Democratic Republic of Viet-Nam	Japan	Australia New Zealand	Total ECAFE	Western Europe
1970							
Young-age dependency[a]	80.6	75.6	62.4	34.7	47.2	69.7	39.0
Old-age dependency[b]	5.5	6.3	6.7	10.1	13.5	6.4	20.4
Total dependency	86.1	81.9	69.2	44.7	60.7	76.1	59.4
1980							
Young-age dependency[a]	81.4	62.0	55.3	36.9	46.2	67.5	39.0
Old-age dependency[b]	6.0	7.0	7.3	12.9	13.8	7.0	22.3
Total dependency	87.3	69.0	62.6	49.8	60.1	74.5	61.4

Source : "World population prospects", *op. cit.*, and individual country data supplied on special request.

[a] Young-age dependency ratio is (0-14)/(15-64).

[b] Old-age dependency ratio is (65+)/(15-64).

paid maternity leave might be provided only for the first two births.

IX. POPULATION CHANGE, CONJUGAL STATUS AND THE FAMILY

In western nations, and more recently in Japan, there was a multiphasic response to the sustained natural increase that stemmed from sustained mortality decline.[33] This response, which was essentially the same from country to country, regardless of language or religion, was to postpone marriage, increase celibacy, resort to abortion, practise contraception and emigrate overseas. In many cases, the response occurred because people found that their accustomed levels of fertility were handicapping them in their effort to take advantage of the new opportunities provided by the emerging economy (see dicussion of population change and mobility in sect. X). For those who remained in the rural areas, the main response was to postpone marriage in order to be able to inherit or buy a farm large enough at least to maintain the status and standard of living of their parents or perhaps to improve it, given the example of economic progress and rising living standards in the urban areas.

In most Asian countries, the response of postponement of marriage to sustained natural increase appears less marked than it was in Europe. This is probably due in part to differences in family structure. European society held married couples responsible for their children without much help from their extended kin, whereas in many Asian countries, especially in south Asia, a bridegroom is usually not expected to be able to take care of a family immediately, a responsibility that, at the beginning, rests with his extended kin.[34]

Although the average age at marriage is much lower and celibacy much rarer in most Asian countries than it was in Europe, nevertheless the average age at marriage is increasing rapidly in those countries where fertility is declining rapidly. Table 23, which shows the distribution of women by marital status in each age group, indicates that in the continuing high-fertility countries there has been little change in the average age at marriage over the past 15 years or so, whereas, in the high-but-declining-fertility countries, the age at first marriage has been increasing, as indicated indirectly by the substantial increases in the proportion that single women are of all women in the 15 - 24 age group. Postponement of marriage plays an important role in Japan's current low fertility, as indicated by the fact that, in 1965, almost 85 per cent of women aged 15 - 24 were single, higher even than Sweden in 1969.

The relatively low ages at marriage in most high-fertility countries, especially India and Pakistan, offer great potential for decreasing the birth rate via increases in the average age at marriage, despite the prevalence of the extended family system. The recent rapid fertility declines and increases in age at marriage among the Chinese populations of Hong Kong and Singapore, offer grounds for optimism in this regard, because they have occurred in spite of a strong familism until recently considered so congenial to high fertility. It would seem that the extended family pattern is not nearly so great a barrier to fertility decline as was once thought.

Widowhood has been declining in the ECAFE region, as part of the general mortality decline, thus tending to increase fertility, but this effect is probably small. Divorce is a rather rare phenomenon in the region, and its influence on fertility is undoubtedly also small, with the possible exceptions of Malaysia and Indonesia.

X. POPULATION CHANGE AND SOCIAL MOBILITY

How rapid population growth tends to retard social mobility was discussed in general terms in the introduction. In the rural areas, increases in the ratio of population to arable land offset gains in land productivity and hence retard the growth of *per capita* income. In the urban areas, the absorption of rural migrants into the urban labour force is impeded by the necessity to absorb also the rapid urban natural increase. in contrast to nineteenth-centrury Europe where urban natural increase was near-zero or negative. The absorption of migrants is also made difficult by the fact that the urban industrial sector is more capital-intensive and less labour-intensive than it was in nineteenth-century Europe. Unemployment and underemployment thus characterize both rural and urban areas. Income inequalities are perpetuated or even aggravated, and social mobility is impeded.

A situation of rising average *per capita* income greatly facilitates upward social mobility, and it has been seen that rapid population growth slows the growth of *per capita* income. Education is an important avenue of upward mobility, and rapid population growth also erodes *per capita* gains in education. Moreover, social mobility often requires geographic mobility, and the latter is impeded by the housing shortages related to rapid population growth.

Social mobility not only is affected by but also affects population change by providing powerful motives for reducing fertility (as mentioned in sect X). As parents rise in status in the new economic order, children become more expensive in terms of education, housing, etc., at the same time that they become economically less useful. Moreover, since social mobility and the geogra-

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[33] Davis, K., "Theory of change and response in modern demographic history", *Population Index*, vol. 29, No. 4, October 1963, pp. 345-367.

[34] Myrdal, G., *Asian Drama* (New York : Pantheon, 1968), p. 1433.

Table 23.

Marital status of women 15-44 years of age (percentage distribution)

		15-24			25-34			35-44		
		Single[a]	Married	Other	Single	Married	Other	Single	Married	Other
Countries with continuing high fertility										
India	1951	17.5	79.8	2.7	2.9	89.1	8.0	1.6	78.6	19.8
	1961	17.0	81.2	1.8	1.5	92.9	5.6	0.7	82.6	16.7
Iran	1956	36.1	62.2	1.7	5.3	91.0	3.7	1.5	87.7	10.8
	1966	35.1	63.0	1.9	2.8	94.4	2.8	1.0	90.8	8.2
Philippines	1956	66.3	32.7	1.0	17.2	77.9	4.9	9.2	81.8	9.0
	1960	67.1	32.2	0.7	16.0	81.1	2.9	7.9	85.0	7.1
Thailand	1956	64.6	32.7	2.7	10.0	82.8	7.2	2.7	84.1	13.2
	1960	62.7	34.1	3.2	10.7	82.4	6.9	3.7	84.6	11.7
Countries and areas with high but declining fertility										
Hong Kong	1961	68.9	30.9	0.2	10.7	87.5	1.8	5.4	87.5	7.1
	1966	82.3	17.5	0.2	9.6	89.2	1.2	4.1	91.5	4.4
Republic of Korea	1955	56.0	41.9	2.1	1.9	89.7	8.4	0.3	84.3	15.4
	1966	75.9	23.8	0.3	4.6	91.7	3.7	0.2	86.3	13.5
Sri Lanka (Ceylon)	1953	53.1	45.7	1.2	10.6	85.8	3.6	5.2	84.2	10.6
	1963	64.6	34.8	0.6	13.0	84.5	2.5	4.6	88.3	7.1
Japan	1955	82.5	17.0	0.5	14.7	80.4	4.9	3.2	81.9	14.9
	1965	84.5	15.2	0.3	14.0	83.8	2.2	5.8	86.3	7.9
Australia and New Zealand										
Australia	1954	67.0	32.6	0.4	12.3	85.9	1.8	8.9	86.5	4.6
	1966	68.7	31.1	0.2	9.7	88.8	1.5	5.5	90.6	3.9
New Zealand	1956	66.4	33.5	0.1	12.7	85.9	1.4	9.1	87.0	3.9
	1966	64.9	34.9	0.2	9.5	89.2	1.3	6.1	90.6	3.3
Sweden	1950	77.0	22.7	0.3	21.1	76.5	2.4	15.1	80.2	4.7
	1969	75.9	23.6	0.5	17.3	78.8	3.9	7.9	84.9	7.2

Source : *Demographic Yearbook 1970* (United Nations publication, Sales No. : E/F.71.XIII.1), table 10.

[a] *Single* = Never married; *Other* = Widowed + divorced + unknown

phical mobility that often goes with it weaken the traditional obligations to and from extended kin, parents need higher reserves of liquid or physical assets for possible emergencies and for their old age. Such assets are necessary also to seize effectively the new opportunities to get ahead economically. In this type of situation, parents perceive the costs of children as high, compared with a traditional rural setting, and are motivated to limit the size of their families.

The fact that fertility is declining rapidly in Asia only in those countries with rapidly rising *per capita* incomes is consistent with the hypothesis that social mobility is an important contributing cause of these declines. However, since economic development involves a whole constellation of social changes, it is difficult to isolate the effect of social mobility alone. The development and use of mobility indices in multivariate analyses of fertility behaviour is a largely unexplored area of demographic research.

XI. INTERRELATION OF POPULATION DYNAMICS AND SOCIAL CHANGE

Changes in each of the spheres of social development considered have their effects on fertility, but from a policy point of view, the crucial question is: what is the most effective mix of socio-economic changes (including the introduction of family planning programmes) that is consistent with rapid economic and social progress and that will rapidly bring down the birth rate?

There is no doubt that government family planning programmes have an important role to play in any such mix, especially at the initial stages of the programmes. The large number of KAP-type surveys (concerning knowledge of, attitudes toward, and practice of family planning) over the past few years have shown that married couples in high- and medium-fertility countries have on average more children than they regard as ideal. It is only in the low-fertility developed countries that couples have fewer children than they regard as ideal.[35] This excess of actual over ideal fertility behaviour in the high- and medium-fertility countries implies a substantial reservoir of ready acceptors at the inception of a family planning programme; and experience has indeed shown that the number of acceptors expands very rapidly in the early stages of a programme. It then tapers off into a much slower rate of growth, no doubt in part because of the partial exhaustion of this reservoir of ready acceptors (in part also to the reluctance of governments to devote more than a small part of development funds to family planning programmes). In the Republic of Korea, for example, KAP surveys showed that the percentage of couples in the child-bearing ages using contraception increased from 9 to 20 per cent between 1964 and 1966 and the evidence indicates that the government programme accounted for much of this increase. But more recently the expansion of the programme has slowed greatly[36].

It should be noted that there are many problems in measuring the independent effect of a family planning programme on fertility, as indicated by the fact that in all those countries and areas characterized by recent rapid fertility decline (Hong Kong, Singapore and the Republic of Korea), fertility declines had already set in before the advent of national family planning policies and programmes. Programme evaluation is clearly important for any long-run population policy.

Even if all the high-fertility countries in the ECAFE region had 100 per cent effective family planning programmes, so that each couple had exactly as many children as it considered ideal, the result would still be explosive population growth.[37] Given that the ideal family size in these countries typically exceeds at least three and often four children, the doubling time of the population would at best be extended by a decade or so. Family planning programmes are an indispensable part of any population programme, since the excess of actual over desired births is substantial, but the more important long-run problem is to alter those aspects of social structure that motivate couples to have large families in the first place. With a substanitial reservoir of ready acceptors at the initial stages of a family planning programme, a Government is wise to expand rapidly the scope of the programme, since the ratio of benefits to costs is high. But, as actual family size gets closer to ideal family size, the ratio of benefits to costs decreases. Studies need to be done to determine the optimal balance between investment in family planning programmes, on the one hand, and investment in those aspects of socio-economic development that will bring down family size goals, on the other, so that the excess of actual over desired births will always be large enough for the marginal costs of converting a woman to the pool of acceptors will be reasonably low.

What then is the best mix of socio-evonomic changes that will bring about a rapid decline in family size desires? Earlier it was stated that, with mortality decline, sustained natural increase, and economic development, people limit births in part because they find that their accustomed high fertility makes it difficult for them either to safeguard their old economic advantages or to seize effectively the new opportunities to gain new advantages (sect. X). The precise mechanisms involved in this evolution need to be specified, and, moreover, the possibility needs to be investigated that, with the emergence of new life styles, large families increasingly pose disadvantages for a couple's leisure life as well as their economic life (the two of course are interrelated).

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[35] R. Hill, "Attitudes to family planning", in Lengyel, op. cit., 92-96.

[36] Ruprecht and Wahren, op. cit., p. 66.

[37] K. Davis, "Population policy: Will current programs succeed?" *Science*, vol. 158, November 1967, pp. 730-739.

On the economic side of this problem, one recent study applied correlation techniques to data from 50 countries (including 15 from the ECAFE region) to examine to what extent the intermediate variables of (*a*) percentage of females economically active in non-agricultural occupations, (*b*) percentage of population who are unpaid family workers, and (*c*) percentage of population under age 15 who are in the labour force, accounted for the fertility effects of the more general exogenous variables of urbanization, industrialization and education.[38] It was found that, when the three intermediate variables were controlled for, the large correlations between fertility and the exogenous variables were reduced approximately to zero, suggesting that the three intermediate variables are of considerable causal importance. Nevertheless, caution is necessary in inferring causation because almost all development indicators are intercorrelated with the above three intermediate variables.

The study suggests that strictly enforced compulsory education and child labour laws can be important population policy supplements to family planning programmes, as can be education and manpower policies designed to provide women with aspirations and work roles that compete with their aspirations and roles as mothers. A large number of studies[39] have shown that a woman's educational and labour force status has a very strong influence on her fertility behaviour.

Some studies have shown that such variables as newspaper circulation *per capita*, telephones *per capita*, and number of modern objects in the home area more closely related to fertility behaviour than *per capita* income itself.[40] The causal connections linking these variables to fertility are not clear, however, and hence the policy implications are not clear either. For example, despite the high correlation of telephones *per capita* with the birth rate, it probably does not follow that an increase in telephones *per capita*, in the absence of the other socio-economic changes that would normally accompany such an increase, would produce a significant fertility decline. The causal mechanisms that underlie such correlations need to be investigated. It is possible that they reflect the emergence of modern life styles characterized by material possessions and forms of leisure and recreation that are increasingly expensive and that increasingly compete with children who are also increasingly expensive.

If we look at the high-fertility countries and areas where fertility is rapidly declining (Hong Kong, Singapore, and the Republic of Korea), their common characteristics are a period of sustained *per capita* economic growth starting a few years before rapid fertility decline, a housing shortage due to rapid population growth and the concentration of investment in high-growth industries, and rapid expansion of the educational system. The introduction of family planning programmes appears in each case to have accelerated a fertility already underway. A government policy of pushing investments in education and high-growth industries appears therefore to be good population as well as economic policy.

What then about such countries as India, Pakistan, Bangladesh, and Indonesia, where economic growth is sluggish? One recent study has shown that, in Asia, *per capita* income thresholds for fertility decline are much lower than they are in Latin America (perhaps because problems of overpopulation are more salient), so that the situation in these countries may not be as hopeless as it sometimes seems.[41] The Asian countries in fertility transition by 1960-1964 all had incomes well below 300 dollars, which is roughly the average level for onset of fertility decline in Latin America. With the exception of the Philippines, which seems to fit the Latin American pattern more than the Asian pattern, all Asian countries that had reached a *per capita* income of 200 dollars were experiencing or had experienced (Japan) a rapid fall in the birth rate. In Sri Lanka (Ceylon) and the Republic of Korea, the onset of fertility decline began at *per capita* incomes of around 125 dollars.

With regard to education, Sri Lanka (Ceylon) is an interesting case because it illustrates the importance of co-ordinating education policy with manpower policy. Although rapid increases in secondary and higher education enrolments appear to have played a role in the recent fertility decline in that country, the education has been primarily of a humanistic nature not geared to development needs. As a result there is a high rate of unemployment among the educated, the economy is stagnating, political instability is increasing, and the fertility decline appears to be levelling off.[42]

Although the present discussion is concerned with the relation of population change to changes in social and economic institutions, it should be noted that still other non-family planning avenues are open to Governments to reduce the birth rate. Many proposals, too numerous to be reviewed here, have been made for extension of voluntary fertility control (e.g. liberalization of abortion laws), establishment of involuntary fertility control (e.g.

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[38] J.D.Kasarda, "Economic structure and fertility: A comparative analysis", *Demography*, vol. 8, No. 3, August 1971, pp. 307-318.

[39] Reviewed in Kasarda, *op. cit.*

[40] See, for example, D. Kirk, "A new demographic transition?" in National Academy of Sciences, *op. cit.*, pp. 123-147.

[41] *Ibid.* pp. 142-143.

[42] Wright, N.H., "Ceylon: The relationship of demographic factors and marital fertility to the recent fertility decline", *Studies in Family Planning*, No. 59, November 1970, pp. 17-20.

compulsory sterilization for all males with three or more living children), intensified educational campaigns (including introduction of population materials into primary and secondary schools), incentive programmes (e.g. payments for periods of non-pregnancy or non-birth), tax and welfare benefits and penalties (e.g. preference given to small families in public housing), and still other possibilities.[43]

XII. PROBLEMS OF DATA AND MEASUREMENT

Simply to assess the magnitude of the population problem, it is necessary to have accurate birth and death registration as well as population censuses carried out at regular intervals. Yet in many ECAFE countries these data are rudimentary, especially registration data. In addition to basic data on births, deaths, migration and size of population, more refined demographic analysis requires accurate marriage registration and accurate information on the distribution of the population by marital status, in order to compute such measures as the average age at marriage and age-specific marital fertility rates. Such data are very sparse in the less developed ECAFE countries. Data on birth interval and fertility by parity (number of children ever born), a type of information necessary for any penetrating evaluation of fertility trends, are even more rare, as are data on fertility by income, occupation, education and other socio-economic variables. The demographic variable is crucial to socio-economic development, and, to adequately incorporate it into national planning programmes, more effort needs to be devoted to the development of census, registration and national sample survey programmes.

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[43] Berelson, B., "Beyond family planning", Pakistan International Family Planning Conference, Dacca, 1969, pp. 67-97.

2. POPULATION CHANGE, CONJUGAL STATUS AND THE FAMILY*

Births, deaths and geographic movements occur in social contexts dominated by marriage and family life. When a man dies, he is someone's father, someone's uncle, someone's son, someone's husband. When a woman moves from one city to another, she moves as wife, as daughter, as mother-in-law. Relatively few births take place outside of a marital union. Birth control involves couples as well as individuals. For these reasons, it is disturbing that so little is known, for most of the ECAFE countries, about families and about the formation and dissolution of marital unions.

Parents and other relatives undoubtedly influence most of the important decisions made about reproduction: questions of when to marry, how soon to have the first child, whether to use birth control, when to have the second and later children, how many children to have in all, when to end child-bearing, and whether or not to tolerate a divorce or a separation (Hill, 1967). The family is also one of the primary agents of socialization, imparting to a child attitudes about many intermediate variables (Davis and Blake, 1956) including: whether marriage is only desirable or almost mandatory, whether sexual abstinence within marriage is permissible, whether long absences from the home of either husband or wife are normatively allowable, what frequencies and timing of intercourse are optimal, whether induced abortion is a moral act, and other similar matters. The family may also influence reproductive behaviour in more indirect ways, for example, by serving as a communication channel through which birth control information is filtered (see Palmore, 1968; Palmore, Hirsch and Ariffin, 1971). Also, if the family functions in society to the exclusion of other social groups, family members may not be able to participate in non-familial activities that influence reproductive behaviour (Goldberg and Litton, 1969).

With respect to mortality, it is clear that the family serves functions related to health (see, for example, Carter and Glick, 1970, 11). Whether in a developed or developing country, family members care for one another in times of sickness, food products are processed in the home and consumed differentially there, and the family structure itself may affect the living standards and sanitary conditions of a given family member.

Geographic mobility is family-related: wives and children tend to accompany husbands when they move; single persons are perhaps more apt to move than married persons; and the need to be close to kin frequently precipitates a move from one place to another. For example, 60 per cent of females and 35 per cent of males over five years old who changed residence between 1961 and 1966 in the Republic of Korea reported "family reasons" for moving (Choe and Park, 1969, table 64 and 65).

Birth, death and mobility also have important effects on marital status and family structures. For example, a high-mortality situation may preclude the prevalence of certain types of extended family (Palmore, Klein and Ariffin, 1970). It also could be hypothesized that high rates of geographic mobility either place pressures on marital unions and lead to higher divorce rates, or foster certain types of extended kinship structures to provide a larger base of social support.

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In short, the area of interaction between families and population change is very wide in scope and involves a two-way process: family structures influence population change; population changes influence family structure.

When social scientists discuss the movement from traditional to modern society, they often emphasize the shift from social organization based primarily on kinship to social organization based on a broader set of institutions. While kinship is important even in modern societies, part of the modernization, industrialization and urbanization process is seen as a change in emphasis: socially valued goals are achieved by individuals interacting with many institutions (modern) instead of by family members interacting primarily as parts of family units (traditional). In an isolated, pre-literate village, the kinship system must perform economic functions, educational functions, protective functions (police, fire), recreational functions and social security functions (in old age or during sickness). It also serves as the principal environment in which a person is viewed as "whole", instead of in his many separate roles as father, employee, commuter, bank client, hospital patient, etc. In the modern setting, the family serves chiefly as the source of emotional response to a whole person, while losing its predominance in education, social security, and the like.

This theoretical view of the family may be linked to population change in many ways. Ryder (1959) has connected certain societal types with each of the stages in demographic transition — the movement from consanguineal familism to individualism accompanying the movement from a society with high fertility and high mortality to a society with low fertility and low mortality. Other authors have concentrated on the effects of family structure on fertility (e.g. Hawthorn, 1970, Ch.V) or on the effects of different fertility and mortality patterns on family structure or family size (e.g. Burch, 1970). One of the more interesting notions is that the values and costs of children to parents change as a couple moves through the period of modernization (e.g. Leibenstein, 1957; Fawcett, 1971).

Clearly, the relationship between the family and population change has many ramifications. Rather than attempt to deal with all of these areas, succeeding parts of this discussion emphasize the interrelations between fertility and family structure. This stress results primarily because fertility variation is the main controlling variable in population growth in today's world and, also, because more data are available on this subtopic.

Extended Family Living, Fertility and Family Planning Use

In order to assess the effects of family on population change, many authors limit their measurement of family-related variables to a simple concern with differences between persons living in extended families and those living in nuclear families. Hypotheses relating extended-family living to fertility are particularly plentiful. The extended-family system has been said to coincide with early marriage patterns (see Hawthorn, 1970, p. 87 ff.). The relationship between labour force participation of wives and their fertility has been said to be confounded by extended-family living with its greater ease of caring for children (e.g. Hawthorn, 1970, p. 103 ff.). The often-raised spectre of the mother-in-law problem in family planning action programmes leads to the hypothesis that family planning is likely to be practised less in situations where there is greater involvement with extended kin.

The chief difficulty with the many hypotheses is that there are so little data available for evaluating their truth. What data there are do not present conclusive findings, as can be seen from data for the Republic of Korea, West Malaysia, and India.

In February 1971, the Korean Institute for Research in the Behavioural Sciences conducted a sample survey of the Republic of Korea. Included in their data were measures of the current living status of married women between the ages of 15 and 45 and data on fertility and family planning behaviour. When the data are compared within each of three broad age groups (15 to 29, 30 to 34 and 35 to 44), little difference is found between the cumulative fertility of women living in extended families and those living in nuclear families (table 24). Somewhat larger differences in the family planning behaviour are found (table 25), but only the greater prevalence of induced abortion among nuclear-family women is really significant.

Data for central India show little relationship between cumulative fertility and family structure (Driver, 1963, p. 82 ff.).

In research on West Malaysia, Palmore and Ariffin have found that married women 15 to 44 years old currently living in extended families have lower cumulative fertility than women who have never lived in an extended family. However, women who previously lived in an extended family but no longer do so have the highest cumulative fertility (table 26). Presumably, high fertility may lead to separation of one family from an extended unit. The West Malaysian findings persist if, using a multiple classification analysis, statistical adjustment is made for differences in place of residence, age at first marriage, number of times married, educational attainment of the woman and race (see Blau and

Table 24.

Republic of Korea: Selected fertility indices by the type of family structure and by respondent's age

Family structure (current living status)		Mean number of pregnancies	Mean number of live births	Mean age at first marriage (years)	Mean first birth interval (months)
R's age 29 or Younger	Living in:				
	Extended family	1.8	1.7	21.0	16.6
	Nuclear family	2.0	1.7	21.5	16.5
R's age 30-34	Living in:				
	Extended family	4.2	3.7	20.6	24.7
	Nuclear family	4.2	3.4	21.2	20.7
R's age 35 or older	Living in:				
	Extended family	6.2	5.4	19.0	39.1
	Nuclear family	6.2	5.1	18.6	39.1
Total, all ages	Living in:				
	Extended family	4.1	3.6	20.1	28.0
	Nuclear family	4.4	3.6	20.2	28.0

Source : Korean Institute for Research in the Behavioural Sciences, *Psychological Perspectives : Family Planning in Korea*, (Seoul, in press).

Duncan, 1967; Andrews, Morgan and Sonquist, 1967, for explanation of multiple classification analysis). These West Malaysian data agree with findings for other countries in research by Nag and Pakrasi and Malaker (discussed in Hawthorn, 1970, p. 86 ff.).

Available data are either contradictory from one country to another or inconclusive. There are many possible reasons for this: mortality and geographic mobility may affect the possibility of living in an extended family—a couple cannot live with parents or siblings if the parents or siblings are dead—or migration may affect living patterns since migration before first marriage may make extended-family living unlikely (Palmore, Klein and Ariffin, 1970). Taking into account these what might be termed availability factors in the West Malaysia data does modify the magnitude of fertility differences between women living in different family situations, but it does not change the direction of the relationship stated earlier (table 27).[1] A similar cross-tabulation for the Republic of Korea (using the data from the Korean Institute for Research in the Behavioural Sciences Family Life Survey mentioned above) also shows that consideration of the availability factors does not modify the direction of the relationship between family structure and fertility (table not shown).

Another reason the results relating family structure to fertility may be unclear, is because classifications of family structure are crude and do not really measure the aspects of family structure that are most important in terms of determining fertility.[2] For example, it may not be the actual living arrangements of family members that is of importance but rather the frequency and types of social interaction that they have with one another. Even though family members may live somewhat removed from one another, they may interact socially both frequently and intensely.

It is also possible that the family structure fertility relationship is unclear because there are variables intervening between family structure and fertility that have not been adequately measured in the studies completed to date. Indentification and verification of these variables form a critical research question for the future.

Age at First Marriage

Another illustration of the complex relationships between family, conjugal status and population change is provided by data on the ages at which men and women first marry. It is known that the age at first marriage for women has been increasing in many of the ECAFE

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[1] These results are from unpublished research work in progress under the direction of Palmore and Ariffin.

[2] For an interesting and comprehensive discussion of family structure classifications, see Howard, 1971.

Table 25.

Republic of Korea: Adoption stage of birth control by type of family structure and by number of live births

Family structure (current living status)	Percentage heard of at least one family planning method	Percentage know how to use at least one family planning method	Percentage used contraception before third live birth	Percentage ever used induced abortion	Percentage ever used either contraception or induced abortion
Less than 3 live births					
Living in:					
extended	79	39	19	6	27
nuclear	84	45	20	19	36
Four or more live births					
Living in:					
extended	86	61	1	23	57
nuclear	90	62	3	30	59
Total, all women					
Living in:					
extended	83	50	10	15	42
nuclear	87	53	12	25	47

Source : Korean Institute, *op. cit.*

Table 26.

West Malaysia: Mean number of live births by type of family structure and respondent's age

Type of family structure	Mean number of live births for women of ages			
	15-24	25-34	35-44	All ages, 15-44
Unadjusted				
Living in extended family now	1.5	3.8	5.6	3.0
Previously lived in extended family but not now	2.3	4.5	6.5	4.8
Never lived in extended family	2.0	4.4	5.6	4.2
Adjusted[a]				
Living in extended family now	1.6	3.9	5.6	3.2
Previously lived in extended family but not now	2.2	4.9	6.4	4.7
Never lived in extended family	1.9	4.3	5.6	4.2

Source : Palmore J. and bin Marzuki, A., unpublished research data.

[a] Statistical adjustment using a multiple classification analysis: adjusted for place of residence, age at first marriage, number of times married, education and race.

Table 27.

West Malaysia: Mean number of live births by type of family structure and respondent's age for women (a) with at least one parent or parent-in-law alive and (b) with at least one parent or parent-in-law alive and living in the same *kampong*, estate, town or city

Type of family structure	Mean number of live births for women of ages			
	15-24	25-34	35-44	All ages, 15-44
At least one parent or parent-in-law alive[a]				
Living in extended family now	1.5	3.8	5.4	3.0
Previously lived in extended family but not now	2.3	4.5	6.5	4.7
Never lived in extended family	2.0	4.3	5.5	4.3
At least one parent or parent-in-law alive and living in same *kampong*, estate, town or city				
Living in extended family now	1.5	3.8	5.4	3.0
Previously lived in extended family but not now	2.3	4.5	6.1	4.3
Never lived in extended family	1.9	4.3	5.4	3.9

Source : As for table 26.

[a] All figures are unadjusted.

countries: examples are found in Malaysia (Cho, Palmore and Saunders, 1968; Palmore and Ariffin, 1969), Sri Lanka (Ceylon) (e.g. Sarkar, 1957), India (Chidambaram and Zodegekar, 1969) and the Republic of Korea (Cho and Hahm, 1968). Many questions are occasioned by observing a trend of this type: (a) What affect does this change in age at marriage have on fertility and hence on population growth rates? (b) What effect do changes in age at marriage have on the prevalent family structures in a country? (c) How does changing age at marriage affect the status of women (which may indirectly influence population change)? (d) Why do these changes occur?

Since later marriage affects the period during which a man or woman is exposed to the risk of conception, it is obvious that later marriage should decrease fertility to some extent, all other factors remaining constant. This fact is not easily demonstrable, however, because in the real world, other factors do not usually remain constant. In both India and West Malaysia, for example, women who marry later have shorter first birth intervals (for India, see Chidambaram and Zodegekar, 1969). In West Malaysia, the spacing between births remains shorter for women who married late for some time after the first birth interval (see table 28). There are also differences in contraceptive use among women who marry at different ages. In the Republic of Korea in 1971, for example, only 15 per cent of the women who married after age 25 were currently using a contraceptive whereas 26 per cent of the women who married before age 20 were current users. While these complicating factors make the effect of age at marriage on fertility difficult to measure, a few studies have shown that it does indeed make a substantial difference on fertility of women who marry later (e.g. Palmore and Ariffin, 1969).

Ages at marriage are also of interest, however, because they are believed to be related to family structure more generally. For example, one would expect women who marry early to be more likely to live in extended-family units (see Hawthorn, 1970, p. 87). Research on this for the Republic of Korea and West Malaysia, however, does not show the same relationship for both countries. In West Malaysia, a higher percentage of women who married young were living in nuclear families; in the Republic of Korea, a higher percentage of women who married young were living in extended families (see table 29). In both cases, the data shown are only for women who had at least one parent or parent-in-law alive. These data are inconclusive, however, because they refer to where women live now instead of where they lived right after marriage. However, for West Malaysia, the data on living arrangements right after marriage show the same relationship (table not shown). Further work is needed on the data for both of these before these preliminary findings should be viewed as conclusive, since ethnic or socio-economic intervening variables may account for the differences in the relationship for the two. At present, it can only be said that the relationship between age at marriage and family structure is complex and needs further research.

It is difficult to predict what will happen to ages at marriage in the future. One phenomenon that is common to many ECAFE countries is an imbalance in the ratio between the men and women who would usually marry. Men tend to be older than the women they marry. Due to recent changes in birth rates of many ECAFE nations, the ratio of men 25 to 29 years old to women 20 to 24 years old shows a surplus of women in the prime marriage years (see table 30). Whether this will lead to lower percentages of women marrying or to shifts in age at marriage towards more equal ages between bride and groom is difficult to predict. It seems likely that both will happen.

Discussion

The remarks and data presented in the preceding paragraphs are only a small subset of the many possible relationships between family types, conjugal status and population change that could be fruitfully discussed. However, while it is clear that theoretical arguments linking population change to family structure and marriages are powerful and convincing, data currently available for most ECAFE nations do not permit a full understanding of the empirical relationships. The importance of knowledge about these relationships is easily demonstrated, but the facts simply are not known. Two concrete illustrations of the important issues involved would be:

1. The labour force participation of women usually correlates negatively with their fertility. Whether women participate in the labour force relates also to child-care facilities, and one potential source of child care comes from the extended family. While the causality of the relationship between fertility and labour force participation is not certain (do women who work have fewer children because they work or do they work because they have fewer children?), some have argued (e.g. Blake, 1965; Davis, 1967) that increased labour force participation for women would be one way to lower fertility in developing countries. One might argue equally persuasively that lower fertility will lead to greater labour force participation by women. Surely either argument speaks strongly for a need to understand the relationship between labour force participation and fertility to foster social and economic development, and the relationship of extended-family living to labour force participation is a necessary element in this.

Table 28.

West Malaysia: Mean number of live births born during specified periods after marriage, by present age and age at first marriage

Present age and age at first marriage	Mean number of live births born					
	In first 1½ years of marriage	Between 1½ and 3 years of marriage	Between 3 and 5 years of marriage	Between 5 and 10 years of marriage	Between 10 and 15 years of marriage	Between 15 and 20 years of marriage
Women 35-44 years old						
Married at ages 0-14	.1	.6	.6	1.6	1.6	1.3
Married at ages 15-19	.2	.7	.8	1.7	1.6	1.1
Married at 20 or later	.5	.7	.8	1.9	1.6	1.2
Women 25-34 years old						
Married at ages 0-14	.2	.5	.8	1.7	1.4	—
Married at ages 15-19	.5	.7	.9	1.9	1.9	—
Married at 20 or later	.6	.9	.8	1.5	—	—
Women 15-24 years old						
Married at ages 0-14	.2	.6	.7	—	—	—
Married at ages 15-19	.5	.7	.8	—	—	—
Married at 20 or later	.7	.6	—	—	—	—

Source : Calculated from table 6 of Ariffin and Palmore, "A third-year progress report on the West Malaysian family survey", in *Proceedings of the Combined Conference of East Asian Population Program and Evaluation of the Malaysian National Family Planning Program* 1970, *National Family Planning Board of Malaysia*, 1971 (in press).

Table 29.

Percentage distribution of type of family structure by age at first marriage for (a) the Republic of Korea, 1971, and (b) West Malaysia, 1966-1967, for currently married women 15-44 years old (data only for women with at least one parent or parent-in-law alive)

Age at first marriage	Living in extended family	Not living in extended family	Total (%)
Republic of Korea			
Married at ages 0-19	33	67	100
Married at ages 20-24	31	69	100
Married at 25 or later	24	76	100
All ages at marriage	31	69	100
West Malaysia			
Marrried at ages 0-14	18	82	100
Married at ages 15-19	27	73	100
Married at 20 or later	30	70	100
All ages at marriage	26	74	100

Sources : For Republic of Korea, data are from unpublished work on the survey discussed in the source note to table 1. For West Malaysia, data are from unpublished work in progress under the direction of James Palmore and Ariffin bin Marzuki and are from the West Malaysian Family Survey described in National Family Planning Board of Malaysia, 1968.

Table 30.

Selected ECAFE nations: Ratio of men 25-29 years old to women 20-24 years old for latest available years

Country	Year	Ratio of men 25-29 to women 20-24
Australia	1965	101.9
Brunei	1960	97.0
Fiji	1966	84.9
Hong Kong	1966	123.4
India	1961	96.8
Iran	1966	88.9
Japan	1966	96.9
Khmer Republic	1962	84.6
Korea, Republic of	1967	95.7
Malaysia (West)	1957	81.9
Nepal	1961	91.3
New Zealand	1966	94.3
Pakistan	1961	103.9
Philippines	1967	83.3
Singapore	1957	103.0
Sri Lanka (Ceylon)	1963	84.7
Thailand	1960	85.1

Source : *Demographic Yearbooks* 1967, 1968 (United Nations publications, Sales No. E/F 68.XIII.1, E/F 69.XIII.1).

2. Early age at marriage usually coincides with lower educational attainment for women (for example, for West Malaysia, see Palmore and Ariffin, 1969). Again, the direction of causality is unclear: do women marry early because they have finished school or do they leave school because they get married? One may also say that early marriage is related more generally to a woman's social freedom and access to the world outside the family (see Goldberg and Litton, 1969). The social effects of changing age at marriage are much wider than simple changes in fertility.

The above are only two illustrations of important reasons why more should be known about family structures and social development. More general theses state that kinship solidarity has both functional and disfunctional elements for modernization (see Talmon, 1970; Liwak, 1970). For most ECAFE countries, one cannot even be definitive about the factual situation with respect to families and marital status. In this situation, social planning is difficult, to say the least, and an enumeration of the population changes and social effects occasioned by shifts in family types and marital status will remain elusive until the basic data are compiled and the vital research has been begun.

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3. POPULATION, HOUSING AND HOUSING DEVELOPMENT*

A. Housing and Housing Needs

The home and its physical environment is the single context in which the largest range of human needs is met and the largest part of human life is lived. Improvement in housing and community facilities is not only valuable by itself but is also an important means to social and economic development — a means for raising standards of health, education, social welfare services and productivity.[1]

A great part of the world's population is housed in unfit and unhealthy dwellings, and physical surroundings and housing output has steadily lagged behind needs during the First Development Decade (1960-1970).[2] Housing is a very acute economic and social problem in the developing countries. In three continents of the world-Africa, Asia and Latin America—it is estimated that one-half of the population is homeless or dwells in unsafe and grossly overcrowded housing. According to the 1965 United Nations estimates, the three combined areas of developing Africa, Asia and the Far East and Latin America require construction of at least 27.1 million dwelling units annually during the period 1970-1975. For Asia and the Far East, 19.8 million housing units need to be constructed annually to cope with increasing population, urbanization, and obsolescence of houses and accumulated backlog of need.[3] Available statistics for countries in Asia and the Far East show that less than two houses per thousand population are being built each year,[4] a figure that is markedly below the desirable rate of eleven per thousand for Asia and the Far East required in 1960 to eliminate the accumulated backlog of housing need and to provide for the growth of population.[5]

In Asia, the housing situation is no better in rural areas than in urban areas. At the beginning of the 1960s, it was estimated that, 40 per cent of the population in the urban areas and 50 per cent in the rural areas of Asia and the Far East were living in insanitary and overcrowded conditions.[6] According to the 1965 United Nations estimates, 14.8 million dwelling units were needed each year for the rural areas and 5.0 million units for the urban areas of Asia.[7] Except for a few countries, according to the latest information, there has been no clear evidence of housing improvement in either area and the staggering population growth has even worsened the situation.[8]

In a purely economic approach, housing needs could be formulated in terms of effective demand of households for housing. In some countries, however, large sectors of the population are not only inadequately housed but also are without sufficient economic resources to improve their housing situation; the needs of these sectors therefore, could not, be considered effective demand for housing. Thus it seems preferable, at least in so far as the lower income groups are concerned, to define the housing problem in terms of minimum social objectives rather than in terms of the economic concept of market or effective demand and to consider that a housing shortage exists as long as the existing levels of housing remain below the aims of housing policy.[9]

In general, the most fundamental factors determining housing need are considered to be:

1. Demographic components

The demographic components include population size, population increase, especially among the adult population, and changes in population distribution by sex, age, marital status or by household size, attributable to changes in fertility, mortality, nuptiality, migration, etc.

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[1] *Towards Accelerated Development : Proposals for the Second United Nations Development Decade* (United Nations publication, Sales No. : E.70.II.A.2), p. 14.

[2] 1970 *Report on the World Social Situation* (United Nations publication Sales No. : 71.IV.13.

[3] *World Housing Conditions and Estimates of Housing Requirements* (United Nations publication, Sales No. : 65.IV.8), p. 4, table 1.

[4] 1970 *Report on World Social Situation, op. cit.*

[5] *Ibid.*, p. 23.

[6] *Report of the Ad Hoc Group of Experts on Housing and Urban Development*, (United Nations publication, Sales No. : 63.IV.1)

[7] 1970 Report on *World Housing Conditions, op. cit.*, p. 4.

[8] *World Economic Survey*, 1969-1970 (United Nations publication, Sales No. : E.71.II.C.1), pp. 49-59.

[9] *Report of the Seminar on Housing Statistics and Programmes for Asia and the Far East*, (United Nations publication, Sales No. : 65.II.F.12), p. 24.

2. Doubling-up of families within households

The degree of doubling-up and nuclearization can best be expressed by the headship rate that denotes a ratio of the number of heads of households, classified by sex, age, marital status or by household size, to the corresponding population.[10] The level of headship rate can be considered as representing the net result of economic, social and cultural influences, such as level of living, degrees of industrialization and urbanization and demands for various consumer durables. The demographic components and the doubling-up factor determine the number and size distribution of households that are more directly relevant than population to the estimation of housing needs.

3. Depletion of the housing stock

The housing stock is constantly being diminished by the loss of dwellings that have become obsolescent or have been demolished or destroyed through accidents, such as fire and flood. This is a particularly difficult constituent of housing need to determine, as the rate at which dwellings fall out of use is influenced both by their technical and social "life", as well as by the availability of economic resources and incentives for their replacement.[11]

4. Standard for housing

Standards for housing vary according to climate, culture, the degree of urbanization and the stage of economic and social development, and they should be established by the countries concerned.[12] For example, the number of households and potential households living in unacceptable types of housing units would be one of the factors to be considered, but the criteria for defining unacceptability would have to be determined . each country according to the conditions and customs prevailing.[13] One of the most important elements to be considered is the number of rooms per person.

5. Accumulated backlog of housing need

The last aspect of housing need considered here is the annual construction required to eliminate deficiencies in the existing housing supply. The backlog of housing need is taken to comprise the number of dwellings required to house that part of the population which can be said to occupy overcrowded, insanitary or improvised housing, or which is actually homeless.[14]

B. Size and Structure of Households

Individuals and their personal characteristics serve as the statistical unit for analysis of the sex and age structure of population and the process of population replacement. They represent the atomistic units of the society. On the other hand, households and families constitute its molecular units, which are of vital importance in many aspects of human life especially housing.[15]

Detailed discussions on concepts and definitions of the terms household and family are beyond the scope of the present paper. Various United Nations publications have dealt comprehensively with these questions, explaining internationally recommended standards for the population and housing statistics and treating problems in application of the standards in national censuses.[16]

1. Regional variations in the size of households

According to a recent United Nations assessment, the total number of households in the world, was estimated to be 725 million in 1965, with an average size of 4.54 persons. The estimate was 432 million households, with an average size of 5.33, for the developing countries, and 293 million, with an average size of 3.54, for the developed. Among the developing regions, the average household size was estimated to be highest in south Asia (5.25) as compared with Latin America (5.09) and Africa (4.99). Among the developed regions, both western Europe and northern Europe showed the very low figure of 3.03.[17]

2. Multiphasic change in structure

Several salient features, patterns and trends have been noted in the demographic and sociological literature with respect to changes in the size and structure of families and households. Although irregularities and reverses are found in specific cases, the general trend is unmistakably in close association, or parallel with, the long-range process of demographic transition in the face of modernization, industrialization and urbanization. Indeed, such secular family changes could not have occurred except in the context of societal modernization.[18]

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[10] The concept of the headship rate is very important since it is a pivot around which the modern method of projecting households and families turns.

[11] 1970 *Report on World Housing Conditions, op. cit.*, p. 2.

[12] Needleman, L., *The Economics of Housing*, (London, Staples Press, 1965), pp. 33-34.

[13] *Housing Statistics and Programmes, op. cit.*, p. 24.

[14] 1970 *Report on World Housing Conditions, op. cit.*, p. 3.

[15] Minoru Tachi, *Keishiki Jinko-gaku* (Tokyo Kokon Shoin, 1960), pp. 247-251.

[16] *Principles and Recommendations for the* 1970 *Population Censuses* (United Nations publication, Sales No. : 67.XVII.3), pp. 33-34, 48-49, 57, 76-79, 175; *Principles and Recommendations for the* 1970 *Housing Censuses* (United Nations publication, Sales No. : 67.XVII.4), pp. 52-55, 59-60, 71-84, 110-112; *Handbook of Population and Housing Census Methods*, Part III: Topics and tabulations for housing censuses (United Nations publication, Sales No.: E.70.XVII.6), pp. 16-19.

[17] "Projections of the number of households and families" (ESA/P/WP35).

More specifically, certain characteristic features of households may be distinguished for each of the two major stages of demographic transition, namely (**a**) the stage of declining mortality, whether rapid or moderate, combined with relatively constant and very high fertility, and (**b**) the stage where substantial decline in fertility has been attained and mortality shows further slow declines. Regarding the first-mentioned stage, in which most developing countries of Africa, Asia and Latin America now find themselves, prominent features are likely to include:

1. Moderate increases in average size of household and family;
2. Moderate increases in the proportion of relatively large-size (six persons or more) households and families, and moderate decreases in the proportion of relatively small-size households and families, with, say, three persons or less;
3. Very small increases or stability in proportion of heads of households for the different sex and age groups; and
4. Small increases or stability in the proportions of nuclear families, and moderate increases in the proportion of one-person households in many countries.

On the other hand, developed countries which have completed the second stage have been characterized by more distinct and sweeping trends. These include:

1. General secular decline in average size of household and family;
2. Increases in the proportion of relatively small-size households and families, with, say, three persons or less, and decreases in the proportion of relatively large-size households and families, say, six or more persons;
3. Over-all increases in proportions of heads of households specific for sex and age except in some middle-aged groups among females; and
4. Increases in the proportion of nuclear families and one-person households, and decreases in the proportion of multi-generational extended families.

The above-mentioned features are only different facets of the dynamic process taking place in households and families as multiphasic responses to a changing configuration of demographic, economic and social factors. These features are by no means mutually exclusive but are, rather, intertwined.

C. PATTERNS AND TRENDS IN HEADSHIP RATES

Table 31 shows unweighted average age-specific headship rates for the more developed and less developed country groups. The age patterns of headship rates closely resemble those of economic activity rates. As in the latter, the male headship rates are higher than the female rates at all age groups. This simply reflects the

Table 31.

Unweighted average age-specific household headship rates for males and females in the countries with available headship data classified according to the level of development around 1960 (percentage of household heads among population of each sex-age group)

Level of development	Age (years)					
	15-24	25-34	35-44	45-54	55-64	65+
Males						
More developed[a]	10.8	68.5	87.4	91.3	90.6	79.0
Less developed[b]	13.3	59.6	81.3	87.0	87.3	77.5
Females						
More developed[a]	2.7	5.4	8.8	15.5	23.3	34.5
Less developed[b]	2.4	8.5	15.9	24.6	32.7	37.0

Source: *Demographic Aspects of Households and Families*, United Nations publication, (in press).

[a] Includes data for 20 countries.

[b] Includes data for 11 countries.

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[18] Some scholars cautioned against an over-simplified interrelationship between family structure and industrialization. For example, see Goode, William J., *World Revolution and Family Patterns* (New York: The Free Press, 1963); Burch, Thomas K., "The size and structure of families: A comparative analysis of census data", *American Sociological Review*, vol. 32, No. 3, June 1967.

fact that, in all societies, the man in his prime of life assumes the role of chief breadwinner in the household as well as the main responsibilities for family affairs apart from domestic chores, child-bearing and child-rearing. On the other hand, women lack such a universal role making their chances for being household heads more conditional on variation in the social and cultural conditions in each country.

In all except the youngest age group, male headship rates are uniformly higher in the more developed than in the less developed countries. The patterns for females show much wider differences than do those for males between the two country groups. There is a similar tendency in both groups for headship rates to be very low in the youngest age group and then to increase with the advancement of age. But, beyond this point, there are few analogous features between them.

Time-series data on sex-age specific headship rates have been very limited, but a number of studies in Europe, the United States and Japan have revealed that, generally, headship rates have increased over time in all sex-age groups except in the middle age groups of females.[19] Increases are particularly notable at ages under 35 years for both sexes.

D. POPULATION GROWTH, URBANIZATION AND RAPID INCREASE IN THE NUMBER OF HOUSEHOLDS

According to the medium variant projections prepared by the United Nations, the number of households in the Asian part of the ECAFE region, estimated at 343 million in 1965, will increase to 593 million by 1985, an increase of 73 per cent. This is remarkably faster than the 42 per cent rate of increase of the population, as a declining trend in average size of household is projected. The average household size, estimated at 5.16 in 1965 is thus expected to gradually decrease, reaching 4.81 by 1985.

According to a United Nations study of factors affecting the number, size and structure of households and families in various countries, it was found that the most influential factor determining a faster increase in the number of households than in the population is a greater increase in the population at working adult ages, say 25 to 64, at which the chances of becoming household heads are high. A faster increase in this segment of population was, then, attributed to an interaction of fertility and mortality declines.[20] In the projections for the Asian part of the ECAFE region, it would be a net result of moderately declining fertility and rapidly falling mortality.

The second important aspect among determinants refers to general increases in sex-age specific headship rates that are, in turn, attributable to increased nuclearization of households, including the establishment of an increasing number of one-person households as a result of internal migration. Migration is nearly everywhere highly selective, and migrants consist predominantly of young adults. The formation of many new small-sized households in urban areas, concomitant with migration, clearly contributes to lower average household size both in cities of in-migration and in countries or villages of out-migration. The significance of this factor lies in the fact that massive rural-urban migration can cause nuclear fission or un-doubling of families even in a country where the nuclearization process is otherwise rather limited owing to deep-rooted extended family tradition and low level of income.[21]

E. POLICY IMPLICATIONS AND NEED FOR FURTHER RESEARCH

The foregoing summary review of the demographic aspects of households suggests some useful policy implications for housing and social development and the need for further research in this field.

1. The above summary shows that population growth and urbanization, accompanied by nuclearization of families, are the most important factors determining a rapid increase in the number of households and, in many cases, aggravating housing problems. It then becomes evident that housing problems, especially in the urban areas, cannot be solved unless policies and programmes on housing are integrated into a larger framework of urban and regional development planning and, furthermore, into the over-all development policies of a country, including population policies. In this respect, housing and urbanization are the outcomes of national economic and social development rather than independent phenomena. For example, it has often been recommended

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[19] Winnick, Louis, *American Housing and its Use* (New York, John Wiley, 1957), chap. VIII; "Illustrative projections of the number of households and families: 1960 to 1980" (United States Bureau of the Census, Current Population Reports — Population Characteristics, Series P-20, December 1958); Cullingworth, J.B., *Housing Needs and Planning Policy* (London, Routledge & Kegan Paul, 1960), chap. 1-4; Needleman, L., *op. cit.*, pp. 20-26; Beresford John C. and Rivlin, Alice M., "Privacy, poverty and old age", *Demography*, vol. 3, No. 1, 1966, pp. 247-258; Parke, Jr., Robert, and Grymes, Robert O., "New household projections for the United States," *Demography*, vol. 4, No. 2, 1967, pp. 442-452; Shigemi Kono, "Changes in structure and size of household in Japan", IUSSP, International Population Conference, London, vol. III, 1971, pp. 2223-2233. See also the valuable mimeographs issued by the Governments of Denmark, Finland, the Netherlands, Norway and Sweden.

[20] *Demographic Aspects of Households and Families* (United Nations publication), in press.

[21] Changes other than purely demographic ones are likely to occur as a result of internal migration in that the migrants' attitudes toward privacy, secularity, rationality, etc., also undergo alteration as a result of the influences of an urban environment, and such changes undoubtedly tend to enhance household formation. However, few studies have as yet been undertaken that throw light on such socio-psychological and motivational aspects of household formation.

that improvement in housing and community facilities should be sought partly in establishment of new townships at some distance away from the largest centres of population so as to halt the continuation of urban agglomeration. In an Asian setting, however, the success of such a measure would be considerably jeopardized if, for example, there is no parallel development of mass transportation systems to carry commuters between the nuclear city and the new towns.

2. In the face of increasing nuclearization of families concomitant with industrialization and urbanization, the main victims among the population are the older, people who, in the Asian cultural setting, have been thrust out of the nuclear families of their sons and daughters and have lost social and economic security, respect and prestige within the framework of traditional extended-family relations, which a changing society is not quite ready to supplant by alternative social welfare systems. This is the area for which effective social policies are most urgently needed. The population projections of the United Nations foresaw considerable increases both in numbers and in proportions of the population aged 65 and over in more developed and less developed countries. In some of the more developed countries, the proportion of this age group may rise to higher than 13 per cent by 1980. Foreseeable rises in percentage level are much lower in less developed countries, but absolute numbers will probably increase faster than numbers of the total population, despite rapid growth of the latter. Social problems of the aged are now growing more acute in the rural areas of less developed countries. In some areas, there is such an exodus of young workers that a considerably aged population is left behind to carry on with the heavy tasks of a subsistence economy. In the urban areas, on the other hand, continuous introduction of advanced technology to industry often drives the older workers out of employment on grounds of their alleged lack of adaptability to new techniques.

3. Trends and variations in the size and structure of households and families, their dynamic changes according to phases of family life cycle, and the factors affecting them constitute a comparatively new field of demography and have been given little attention in the literature. The study of households and families, including marriages and divorces, is perhaps the most underdeveloped branch in demography, and it should be promoted and expanded in the future. Analysis of the life cycle of families, identifying a cohort of marriage and tracing the building up of families, provides a useful framework for the study of households and families, but, in view of the paucity of relevant data for the ECAFE countries, it would appear that it is only of academic interest at this stage.

4. In addition to projections of the total number of households, demands have been growing for more detailed types of projections of household composition. These include projections of households of different sizes, i.e. projections of one-person, two-person households and so on. Such projections are useful for planning in such areas as housing, social development and production and distribution of consumer durable goods. Such planning is likely to become even more important in the future. Few such projections have thus far been prepared, however, owing to the paucity of pertinent data and the inadequacies of existing methodology.[22] Projections of this kind thus remain essentially at an experimental stage and await the development of more elaborate techniques.

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[22] For examples of such projections, see Brown, S.P., "Analyses of hypothetical stationary population by family units: A note on some experimental calculations", *Population Studies*, vol. IV, No. 4, 1951, pp. 380-394; Glass, Ruth and Davidson, F.G., "Household structure and housing needs", *Population Studies*, vol. IV, No. 4, pp. 395-420; Schubnell, Hermann, "Statistical ascertainment of households and families in the census: Programme, organization, analysis including projections", International Seminar on Population Statistics and the Use of Computers with Reference to Population Censuses, Wiesbaden/Berlin, 1969; "Projections of the number of households and families, 1967 to 1985" (United States Bureau of the Census, Current Population Reports-Population Estimates, Series P-25, No. 394, June 1968).

4. POPULATION CHANGE, HOUSEHOLDS AND HOUSING DEVELOPMENT*

1. Introduction

Most aspects of social development are influenced by population change; but, as is true in many fields, change may take effect only after a certain lead time. A sharp rise in the number of births in a country, for example, will not affect school enrolments for five or six years. On the other hand, population change, an increase or decrease or a change in composition of the population, has an immediate and marked effect on housing demand; changes in birth rate, marriage pattern, migration and death rate immediately influence housing conditions. Housing development planners, therefore, must respond quickly and decisively to population changes; and they must work closely with demographers to obtain reliable and timely data on all aspects of population change.

2. General Considerations

Since the Second World War, countries in Asia, and notably those in the ECAFE region, have experienced a high rate of population growth principally due to a sudden drop in the crude death rate in most countries from about 30 per thousand to about 10 per thousand. This drop was coupled with a steady, high, crude birth rate about 40 per thousand in many countries, especially those with large populations, such as India, Pakistan and Indonesia. Decline in mortality widened the gap between birth and death rates resulting in a regional population growth rate of slightly over 2 per cent per annum. Some countries even have displayed a higher rate, nearly 3 per cent per annum. On the other hand, a few, such as the Republic of Korea, Hong Kong and Singapore, which have comparatively small populations, have experienced a declining birth rate, their natural rate of increase being about 1.5 to 1.7 per cent per annum.

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Projections prepared by the United Nations hold that a high rate of population growth will persist for the next 10 or 20 years and will then drop only slightly to not less than 1.7 to 1.8 per cent per annum. Many people believe that industrialization and a long-continued rise in living standards will eventually bring about a decline in the birth rate, but the decline in death rate, which is expected to continue for some time, will sustain a high rate of population growth. This rapid rate of population growth will no doubt give rise to a number of economic and social problems involving, for example, food supply, education and medical services. However, the housing problem will be exacerbated further by other demographic and social factors brought about by the population change.

3. Aspects of Population Change Affecting Housing

Changes in age structure

Most countries in the region experienced a baby boom after the Second World War. Some experienced it during the late 1940s, but for others it was delayed until the early 1950s. Now, or within a few years, the children of this postwar population increase will reach marriageable age between ages 20 and 29. Many of them will of course marry and establish their own families, thus creating an unusually heavy demand for housing. But other factors may affect the outcome. Income and availability of housing may affect the decision to marry. This is especially true in urban conglomerations like Hong Kong and Singapore. There, some young couples leave their parents' houses once they marry; some even move out before marrying, when they find employment and are self-supporting.

Decline in mortality

As has been mentioned, almost all countries in the ECAFE region have experienced a substantive decline in mortality since the Second World War. In many developing countries in the region, crude death rates have been reduced by nearly one-half during the last 20 years and are at present near the levels recorded in the economically most advanced countries. The rapid decline of mortality in the developing countries can be attributed, primarily, to improvements in medicine and public health. On the one hand, this rapid decline brings with it a higher rate of population growth; and, on the other hand, a longer life span. Combined with high fertility in the less developed countries, this further aggravates the problems of housing shortage.

Migration and urbanization

Internal migration normally leads to the splitting up of families with new, smaller family groups established: this increases the need for housing. The effect from international migration, on the other hand, is less significant in this region mainly because most countries have adopted a controlled immigration policy.

According to a paper on "Growth and Distribution of the Rural and Urban Population of the ECAFE Region",[1] in 1950, east Asia (China, Japan, Hong Kong, Mongolia, and the Republic of Korea) and south Asia (all the other countries of the Asian continent) had almost equal levels of urbanization. In both regions, just under 16 per cent of the population lived in urban areas. By 1970, the level of urbanization in east Asia had almost doubled, to 28.6 per cent; while that of south Asia had increased only to 21.1 per cent. By the year 2000, east Asia's urban population, it is estimated, will be around one-half of its total, whereas that of south Asia will be only one-third. In 2000, then, nearly 40 per cent of the population of Asia will live in urban places, as compared with the 16 per cent of 1950.

Internal migration (people moving from agricultural communities to the cities and towns) is the main contributor to the anticipated increase in the urban proportion. A number of people will move with their families to the urban areas, but many single men and women will go there seeking better jobs and a higher living standard. These young people, when they first arrive, will need small housing units—a room or just bed space. But later, after they find employment and settle down, they will marry and then require a larger housing unit.

In agricultural communities, when young people marry, many of them continue to live with their parents and thus do not immediately create a housing problem. In urban communities, this is not normally the case. Thus, with the increase in the urban proportion from 16 to 40 per cent as estimated, the increase in the absolute number of the urban population will be even more startling and suggests that housing requirements in urban areas will be most extensive and serious.

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[1] Paper (POP/Sem. ERUP/BP/2) presented by the ECAFE secretariat at the Regional Seminar on Ecological Implications of Rural and Urban Population Growth, Bangkok, 1971.

The growth of squatter settlements in urban areas, which came as the aftermath of the Second World War, has become a problem for most countries. Millions deprived of their homes in the war-torn areas or displaced from overcrowded city slums or refugees have set up flimsy quarters and shacks with no regard for land ownership rights, and have caused city dwellers and government authorities considerable alarm. Many attempts have been made to move squatter families to permanent accommodation but usually without success, and their settlements now show every sign of becoming permanent.

These new shanty towns, as they are sometimes called, are often not provided with public services and are thus both insanitary and insecure. The poverty of many of the squatters, the high percentage of underemployed and underpaid, and the lack of medical and health facilities and of education for the squatter children have given cause for alarm to social workers. What appears to be the major concern of the squatter population is finding steady employment so as to secure better housing accommodation. Many governments have tried to obtain the necessary funds and lands on which to build housing units at rents that squatters can afford to pay. But some squatters have preferred to remain where they were because the new housing units were far away from the place where they could find employment or were employed. Other squatters feared the loss of freedom consequent on entering the more disciplined environment of a government-controlled housing estate. For some, a marginal rent increase was a severe disincentive. Others feared the prospect of living in high-rise structures remote from ground level. The squatter problem persists.

3. Changes in Household Size

Asian countries and areas like the Republic of Korea, Hong Kong and Singapore had a drop of some 20 to 40 per cent in fertility during the past eight years. Some of the reasons for the decline are associated with social and population changes, especially in the case of young people in the urban areas who tend to maintain their own smaller family, especially true if the young wife is also working, and contributing towards the support of this new small family. Additionally, as was mentioned, some young people, especially men but now gradually more and more women like to live separately from their parents once they obtain some financial indepenednce, creating the need for more but smaller housing units. It is also believed that the higher divorce and separation rate in some countries in this region has some effects on housing requirements.

People in the developed countries tend to move away from a large family environment once they marry or are financially independent. As Asian countries become developed, the impetus to break up large families will no doubt affect the functions of the family. In agrarian society, the family concept is very strong and tightens the relationship among members of a family. The family is treated as an economic unit, and, in this sense, more children mean more hands in the field. In urban society, such a requirement does not exist and there is a tendency to split families into smaller nuclei. Although the number of wage earners in these smaller families is less and total family income also decreases, the average income per head is usually higher.

Housing aspirations also change. In agrarian society, housing does not pose any serious problem. Usually the house belongs to the family and will accommodate all members of that family, no matter how numerous they are. In urban society, a family may not own its own house and so housing becomes an urgent problem. Again, if members of the family move out to set up independent households, they have to look for new housing and spend a fair proportion of their family income on rent.

4. Housing Development

Due to effects of population changes, countries in the ECAFE region are now facing serious housing problems. Especially critical are the problems of the large cities, which are overcrowded as a result not only of the increasing number of permanent residents due to rapid population growth but also of migration of large numbers from the rural areas. In fact, the situation of the cities is depressing and the prospects for providing their expanding population with adequate housing, services and amenities are not bright. And their situation is worsened by other factors, such as the uneven distribution of income and ethnic, caste and religious differences.

Public housing is the governmental device for providing people with public facilities and low-cost housing. The immediate problems to solve are shortage of funds and availability of land. There are also problems of building technology and of housing management to solve. In addition, there must be sufficient land area for housing development, and the location of the land must be in the right place because people do not want to move to a location far away from their place of work. Demolition of existing slums and shacks of high density to create new housing for fewer people has been found to be costly. The whole problem of squatter rehousing is subject to much debate, but there is one group of planners who advocate that where possible, squatter housing should be legalized and upgraded by minimum investment in infrastructure (sewerage, water supply, etc.) so as to leave capital free for other forms of investment. In some countries, there are arguments that low-cost housing should be a central government concern, whereas the administration of such housing and the use of land should be matters for local government because they affect town planning policy.

Possible sources of finance could be (a) Government aid, (b) international aid, (c) individual private loans, and (d) private housing schemes. The Government can take all four approaches, including promoting more private housing schemes by a new land policy, alloting cheaper land for such a purpose and giving better terms with regard to building or payment. The Government may also acquire the land: plan the siting of structures, community spaces and roads; install basic utilities and schools; and later sell the land to private developers. Ideally, cheap transport to the city centre should also be made available.

In addition to the above, the Government can build more multi-storey, low-cost resettlement estates, such as those in Hong Kong and Singapore. The building cost per unit should be fairly low so that the rent charged is acceptable to squatter and other low-income people. Moreover, less land would be required per housing unit because of its multi-storey nature, and it should not be too difficult to convert these units into larger units later on in response to changes in family size and improvements in the standard of living.

Improvement of sanitation and open space and provision of utilities and community facilities for existing slums and squatter communities should be an alternative solution to the problem, but Governments have so far been reluctant to pursue this course for fear of giving these illegal occupants a basis for permanency or of attracting more such occupants. The more effective means would be the improvement of rural housing and amenities, decentralization of industry and the setting up of more satellite towns to relieve large cities of their housing burdens. But each country will need a different mix of policies depending on its individual circumstances.

5. Conclusion

Most countries in the ECAFE region will face increased housing difficulties over the next decade. A decline in mortality, as yet unmatched by a substantial decline in fertility, will mean an increased population at the same time that marriage rates will be high, as a result of the post Second World War baby boom. All these factors combined with increased urbanization will create increasing demands for housing. These demends will have to be met by concerted action on the part of Governments and housing authorities. Such action will probably have to include priority measures for financing new housing and planning housing development, steps not yet adopted in many countries.

5. POPULATION CHANGE, FOOD SUPPLY AND NUTRITION*

We have come a long way since Malthus posed the problem of population as that of an unequal race between the rates of population growth and the means of subsistence. The experience in the ECAFE region, and elsewhere, during the last few decades shows that the dependence of population growth on growth of the means of subsistence is very loose; that death rates can decline substantially without any or much improvement in nutrition levels of the population; that fertility is not very much affected by undernourishment. But, though in the present technological context the relationship between the rates of growth of population and means of subsistence or food supply has tended to become more indirect, elastic and loose than when Mathus wrote, it has not ceased to signify. The decline in mortality in the developing countries of the ECAFE region has been, it is suspected, accompanied by an increasing incidence of morbidity that makes serious inroads into the working capacity of the population. A major cause of the higher incidence of morbidity is believed to be the seriously deficient nutritional levels prevailing in the area. The relationship between growth rates, therefore, has assumed a subtler form and has in consequence become perhaps more difficult to tackle.

While the average annual growth rate of food production in the developing countries of the Far East over the period 1952-1954 to 1967-1969 averaged 2.9 per cent, that of population growth averaged 2.4 per cent. This represents a *per capita* rate of growth of food supplies of 0.5 per cent per year. In the earlier part of this period, 1952-1954 to 1959-1961, the annual rates of growth of food production and that of population were 3.4 per cent and 2.3 per cent respectively, resulting in an annual *per capita* rate of growth of food supplies of 1.1 per cent. In the subsequent period, 1959-1961 to 1967-1969, while population continued to grow at an accelerated rate of 2.6 per cent per year, food production increased at a decelerated annual rate of 2.4 per cent resulting in a *per capita* rate of growth of food supplies of -0.1 per cent per year. The alarm caused by this deteriorating trend was quieted by the "green revolution" occurring towards the end of the 1960s. The Director General of FAO noted in 1970 that, in contrast with other developing areas of the world, the Far East, with its immense population, had had three successive large increases in food production (4 per cent in 1969, 6 per cent in 1968 and 4 per cent in 1967) since the disastrous harvests of 1965 and 1966.

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* The Population Division, ECAFE.

The "green revolution", resulted from the introduction of improved strains of rice and wheat that were evolved by crop experiment stations. These new strains mature rapidly and are suited to multiple cropping because they are aseasonal. They respond more to heavier doses of fertilizers than strains hitherto cultivated. They do not need more water but benefit from more water. With the price levels prevailing after the poor harvests of 1965 and 1966, the adoption rates of the new strains have been astonishingly rapid. These improved seeds, in contrast with similar phenomena in the past, are only one constituent in a scientifically balanced programme of inputs, tied to an on-going programme of seed research aimed at solving problems as they arise.

The technological euphoria that this gave rise to in some circles needs to be tempered. It should be noted that, even with the revolutionary raising of yields of rice and wheat claimed for it, the "green revolution" has only succeeded in bringing back the production of these grains to levels indicated by the longterm trends projected in the 1950s and from which the actuals were markedly falling during the preceding decade. The "green revolution" also by-passes many other problems. It by-passes the institutional problems of credit and tenure and the problems of storage capacity and marketing facilities are made more acute.

In the context of the population situation, the crucial question is whether the "green revolution" opens up the prospect of a sustained increase in food supply that will keep pace with the expected rate of population increase in this region. An equally important question is how the "green revolution" affects the prospects of employment of manpower.

According to the medium variant of the United Nations population projections for the next three decades, the rate of population increase in middle south Asia, southeast Asia and Oceania (excluding Australia and New Zealand) is not likely to be less than 2 per cent per year, probably tending towards 2.5 per cent per year, and will involve more than a doubling of the population in the next 30 years. The consensus of experts, both the optimists and the cautious, seems to be that, for at least a decade or two, the "green revolution" does hold out prospects of food production keeping pace with the expected rate of population increase in these areas, but that the long-term prospects do not seem very bright. The "green revolution", if sustained, can give a short respite to countries in this region to set their houses in order in respect of population growth.

Regarding employment, informed opinion inclines to the view that, in the short run the "green revolution", by making possible increased multiple cropping, and also by making it profitable to use labour in ways that were not required previously (e.g. for weeding), can be expected to increase rural employment to levels higher than those prevailing before. The long-term prospects, however, are likely to be in the opposite direction because of the tendency of the "green revolution" to increase the concentration of landholdings, thus promoting mechanization of agriculture. This may be accentuated by a tendency to shift land out of labour-intensive crops, such as sugarcane and cotton, to foodgrains.

In the regional and the international context, the "green revolution" opens up the prospect of several foodgrain-importing countries in the ECAFE region attaining self-sufficiency in that regard, and consequently it adversely affects the trade prospects of countries, like Thailand, that export foodgrains on a large scale. It follows that international trade in foodgrains in this region is likely to shrink considerably in years to come as a result of the "green revolution".

Further difficulties can be cited. The rather limited field in which the "green revolution" has become operative may be sharply marked off. The improvement in strains is mainly confined to rice and wheat and does not extend to the coarse grains, like millets and maize, that are regarded as the foodgrains of the poor. Similarly, pulses, the main source of vegetable protein for the poor, and oilseeds have not been affected by the "green revolution". Even the improved strains of wheat and rice benefit cultivators of land with secure irrigation and water supply, but leave out of their purview the cultivators of land dependent on uncertain natural precipitation: the kind of land that is cultivated by the majority of the poorer peasants in these countries.

A general maintenance of a balance between the annual growth rates of population and food supply over a long period does not mean that the existing situation between population and food supply is satisfactory unless the situation in that respect was satisfactory, at the beginning of the period. All evidence indicates that the *per capita* availability of foodgrains in this region at the beginning of the 1950s was below the average calorie requirements and, more particularly, the deficiency of proteins was even more pronounced. At best, therefore, the evidence of growth rates examined so far only shows that the situation has not on the whole deteriorated from what it was at the beginning of the 1950s.

Very little satisfaction can be derived even from this limited observation however, as the statistic of *per capita* availability of food grains represents a serious malnutrition of reality. It is derived by simply dividing available foodgrain supplies by population. It only indicates that, if the available supplies were equally distributed among the population, this sort of availability per person would prevail. But, in reality, this kind of equal division does not prevail. The actual availability of foodgrains at the individual level is a function of the distribution of income, which in turn depends on the distribution of land and other wealth, the occupational structure, and the social stratification. All evidence indicates that the distribution of income and wealth in the ECAFE countries is grossly unequal; and, as a very large proportion of the population lives below the primary poverty line, which can be broadly defined as income lower than what is required to have the minimum necessary calories per person, widespread deficiency of calories for very large proportions of populations is characteristic of many countries in the ECAFE region. It is not therefore purely a problem of producing enough foodgrains, but of changing the prevailing situation and structure of economic and social inequality in these countries.

At best the "green revolution" represents a technical potentiality of solving the problem of matching over all supplies of foodgrains to the increasing population in the region. As already noted, however, the same cannot be said about matching protein supplies (vegetable and/or animal) and population. Increasing consumption of foodgrains per head is likely to mitigate only slightly the widespread and serious deficiency of protein consumption. Unless the "green revolution" spreads to sources of vegetable proteins, the problem cannot be remedied. But it is imperative that increased production of vegetable proteins be achieved because the prospect of increasing available supplies of animal proteins is not bright, given the adverse man-land ratios in this region. Production of animal protein is very land intensive. It has been estimated that for every calorie of animal foodstuffs produced, five to eight primary calories are required. In other words, five to eight times as much land is required for feeding a non-vegetarian as for a vegetarian. The poverty-imposed vegetarianism of the majority of the people in this region can be seen as a way of economizing land, and it mainly arises from the shortage of land relative to population. The problem of protein malnutrition thus lies deeply embedded in the man-land ratio and consequently in the social-economic structure. The "green revolution", therefore, does not and cannot solve the problem of development without appropriate structural changes in the societies of these countries.

In fact, there are several parallels that can be seen between the problems of the "green revolution" and those of population control through the spread of family planning. Just as the latter has now ceased to be a technical problem and has become one of changing social attitudes and practices; the "green revolution", though still in the technical stage, is fast threatening to become a problem of successfully solving the problems of social and economic inequality. The real problems, in both cases, lie in the social sphere.

6. POPULATION, FOOD AND NUTRITION IN ASIA AND THE FAR EAST*

It was only recently that food and nutritional aspects of the population problem in the context of economic and social development began coming into clear focus. Thus, it would be appropriate to consider briefly why nutrition is relevant to the process of development, which, if it is to be meaningful, must be designed to improve the quality of life. Nutrition surely must be a key objective of development since continued malnutrition makes a mockery of development itself. Malnutrition can impair national growth potentials in many ways, in the short run as well as in the long run. The importance of nutrition to the current efficiency and productivity of the adult labour force has been recognized for many years. It is also easy to perceive that the vast numbers of children dying of malnutrition are a severe loss to society and that it would be better for a child not to be born than to die of malnutrition. What is new, however, is the accumulating evidence that early malnutrition leads to mental retardation that cannot be reversed with improved nutrition in later years. Thus, nutrition can play an important role in the improvement of the quality of human resources, which have been always recognized as the most valuable form of capital. Nutrition is a crucial factor in the long-term growth and development of the children of today and hence of the nations of tomorrow.

Population and National Food Supplies

Since the food supply is the basis of all nutrition, it is relevant first of all to consider how food production has been keeping pace with population growth in the region. Table 32 illustrates how increases in food production have been seriously eroded by population growth in several countries in the region during the past two decades.

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Table 32.

Food production and population growth rates compared

Country	Average annual growth (1952—1954 to 1967—1969)	
	Food production	Population
Burma	2.3	2.0
India	2.4	2.2
Indonesia	1.9	2.3
Pakistan	2.8	2.9
Philippines	3.4	3.3
Sri Lanka (Ceylon)	3.6	2.5
Thailand	4.2	3.1

Source: *State of Food and Agriculture, 1970* (Rome, FAO, 1970), annex table 10 A.

Contrary to the frequently made assumption, it can be seen that food production has not been lagging behind population growth in the region. While the progress in producing it has been more impressive in some countries than in others, they have all promoted agricultural development actively. The fruits of such development, however, have been eaten up in most of the countries by the simultaneous growth of population. Nevertheless, there is cause for satisfaction in the continuing improvement in food production in the region, as stated last year by the Director General of FAO in his foreword to *State of Food and Agriculture*, 1970, when he said:

> But in the Far East, with its immense population, there was the third successive large increase in food production (4 per cent in 1969, compared with 6 per cent in 1968 and 4 per cent in 1967) since the disastrous harvests of 1965 and 1966.

Furthermore, he stated in the foreword to *State of Food and Agriculture*, 1971:

> A reassuring feature among the developments in world agriculture in 1970 was the continued progress of rice and wheat production in the Far East, the world's most concentrated food deficit zone, as steadily increasing use was made of improved seed varieties.

Family Size vis-à-vis Food and Nutrition

However encouraging current trends in total food production may seem, food supplies viewed at the national level do not show the real picture as it exists within a country. It would be more revealing to examine the relationship of family size to the food and nutrition of different sections of the population within a country. The negative influence of family size on nutritional intakes is clearly indicated by data from surveys conducted in eight regions of the Philippines during 1958-1967, which show that the *per capita* calorie and protein intakes fall steeply with increases in the numbers of household members (table 33).

Table 33.

Household size and nutritional intakes compared, Philippines survey

Number of household members	Daily *per capita* intake	
	Calories (No.)	Proteins (g)
1—3	2,180	66
4—6	1,750	51
7—9	1,620	45
10—12	1,600	44
Over 12	1,500	43

Source: E. Quiogue *et al.*, "Nutrition Survey of Eight Regions in the Philippines—Dietary Phase", *Philippine Journal of Nutrition*, XXII, 1969.

This deleterious effect of family size on food and nutrient intake is naturally reflected in the growth and development of the children. In a body weight survey of infants and pre-school children in the province of Laguna (Philippines) in 1969, it was found that "the third pre-school child in the family was more stunted than the first or second in 73 per cent of the families studied; the fourth pre-school child in the family was more stunted than the older brothers or sisters in 96 per cent of the families studied". The same survey observed that even the spacing of children in a family affected their growth and development: "In families with less than 18 months between offspring, the second or younger child of the pair was less well developed physically than the first".

As can readily be expected, the negative influence of family size on food and nutrient intake is also reflected in the nutritional health of the children. Data relating

Table 34.

Family size, income group and nutritional deficiency compared, India survey

Income group	Percentage prevalence of nutritional deficiency signs	
	Small families (up to 3 children)	Large families (4 or more children)
Low, income	27%	93%
Middle income	15%	53%

Source: Shashi Prabha, "Studies on the co-relation of nutrition and family size", dissertation submitted to the University of Delhi 1968.

to an urban group in India vividly illustrate this point by indicating that the lowered food and nutrient intakes of the larger families result in increased malnutrition among infants and pre-school children (table 34).

Food Consumption Patterns

All the above-mentioned features of the problem must be viewed in the context of the present food and nutrition situation in the region. On the basis of many recent studies, especially the FAO *Indicative World Plan for Agricultural Development*, it can be said, without exaggeration, that there are few problems which demand more urgent attention in the region than that of nutrition. Hence, it is relevant to consider now the main features of these studies with respect to food and nutrition. The consumption level of different foods in the types of diet commonly found in the region can be summarized as follows:[1]

I. *Most of India, Bangladesh and Sri Lanka (Ceylon)*

Rice, millets and other cerals	Moderately high
Pulses, fats and oils	Moderate
Milk	Low
Meat, fish and eggs	Very low

II. *Thailand, West Malaysia, Philippines and the Republic of Korea*

Rice, starchy roots and tubers	High
Meat, fish and eggs	Moderate
Milk and pulses	Low

III. *India (Punjab) and Pakistan*

Wheat, rice	High
Milk and pulses	Moderate
Meat, fish and eggs	Low

The predominant feature of the diets in the region is that cereals contribute the major part (up to 80 per cent) of the calorie supplies and also the bulk (up to 70 per cent) of the protein supplies. Pulses are very important in south Asia, contributing about 20 per cent of protein and 10 per cent of calories, but their significance in the rest of the region is small at present. Foods of animal origin, however, contribute only 4 per cent of calories and 10 per cent of protein in south Asia, although, their contribution in east Asia is somewhat higher at 8 per cent of calories and 28 per cent of proteins. Among foods of animal origin, milk is of crucial importance in south Asia, while meat and fish are more important in the rest of the region.

With respect to the nutritional adequacy of the current diets in the region, calorie levels in south Asia are low and underline the problem of food shortage in the countries concerned. In the region as a whole, the calorie deficit is not so serious, but there are indications of considerable food shortages for low-income groups in many of the countries owing to the inequitable distribution of available food supplies. As described earlier, larger families with more children are particularly hard hit in this respect. Consequently large families among the poor classes, which constitute large sections of the population in most countries of the region, face very serious food shortages. With regard to protein, the supplies are not only short in the region as a whole but also of lower quality than in many other regions. Under these circumstances, the widespread occurrence of calorie-protein malnutrition among young children is inevitable. Since the intakes of essential vitamins and minerals also are frequently inadequate, nutritional deficiency diseases of a multiple nature are often serious among mothers and children. The diseases obviously due to nutritional deficiency, however, reveal only a small part of the problem, thus resembling the visible part of an iceberg. The less obvious subclinical malnutrition is far more serious, because it is more extensive in its incidence and also more insiduous in its effects.

Future Prospects and Problems

Two recent studies by FAO are concerned with a systematic review of the current trends as well as future prospects and problems related to food and agriculture. The earlier study is the *Indicative World Plan for Agricultural Development to* 1975 *and* 1985.[2] From the "Regional study for Asia and the Far East", the following two principles emerge for the region as a whole, although their specific application will vary from one country to another:

1. As long as the calorie deficiency continues to be a major problem in the region, the priority objective should be to satisfy calorie needs, giving first priority to cereals and also pulses as much as possible.
2. When calorie intakes are fairly satisfactory, the emphasis should be progressively switched to protective foods, i.e. pulses, milk, eggs, meat, fish, fruits and vegetables.

Assuming that the relevant food supply programmes can be implemented in the next two decades, the following nutritional implications of such programmes will reflect the above-mentioned two principles:

1. Calorie supplies can be expected to meet fully the nutritional needs in most countries of the region, although marginal deficits may persist here and there.
2. *Per capita* levels of protein intake can be expected to increase in every country progressively and this will apply to total protein and also to protein of animal origin.

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[1] *Indicative World Plan for Agricultural Development to* 1975 *and* 1985 *Provisional Regional Study No.* 4, *Asia and the Far East*, Vol. 1 — Text (Rome, FAO, 1968).

[2] *Ibid.*

The more recent study is *Agricultural Commodity Projections* 1970-1980,[3] which was essentially a continuation of earlier studies on commodity projections and included the following specific objectives: "To assess the impact of current trends and projected developments on the prospective world food situation in 1980, with particular reference to nutritional levels in developing countries." Among the highlights of this study, these are particularly relevant:

1. If the projected levels of demand are fully satisfied, in 1980, there will still be 42 countries, with a total population of 1.4 billion, where national average levels of calorie intake will be below nutritional requirements.
2. Diets will become more diversified in both high-income and developing countries with a continuing shift from cereals and roots to animal products, fruit and vegetables.

Implications for Population Policies and Programmes

The relevance of the findings of both studies is obvious in the context of current discussions of the food-population balance, especially in its social aspects. The forecasts of the FAO studies may, at first sight, present a rather hopeful picture. However, this is a particularly apt example of a situation where optimism must be tempered with caution for several important reasons. First, the forecasts are conditioned by some big *ifs:* (*a*) *if* the projected rates of increase in GDP are achieved; (*b*) *if* the projected rate of increase in food production is also achieved; and (*c*) *if* population increase does not occur at a faster rate than that projected by the United Nations. The last is the biggest one for this region. On the basis of the *medium* population projection of 2.5 per cent per annum, the *per capita* consumption can be expected to grow by about 2.8 per cent. However, if the efforts at population control were as successful as implied in the *low* population projection, *per capita* consumption could grow by 3 per cent. On the other hand, if the population were to grow at the *high* projection rate, as might happen in the absence of sound population policies and programmes, *per capita* consumption growth would be only 2.4 per cent. In themselves, the differences may appear small, but they are substantial in relation to the present low levels of food supply and nutrition in the region.

There is another important reason for sounding a note of caution. Even if the forecasts are met in practice, it must be remembered that all these projections are on a *per capita* or national average basis and that certain sections of the population are very likely to continue to suffer from malnutrition because of inequitable distribution of available supplies. Under present conditions in the region, as described earlier, the larger families with greater numbers of children will be the most vulnerable.

At this stage, consideration must be given to an important question that has been very puzzling but has been best answered in these words of the FAO Director General from his keynote address to the First Asian Nutrition Congress (1970):

> Since the population explosion was triggered by a fall in death rates, it may seem curious to suggest that improved nutrition which would save even more lives, especially among young children, could help in solving the problem. But there is definite evidence that it could. For the continued thrust of the population explosion is far less due than is often supposed to ignorance or lack of contraceptive methods. The fact is that a large number of people, especially in primitive societies largely bereft of social security systems, *want* to have more children than either they or society can afford in order to be sure that at least one or two survive. Quite clearly, then, if measures were taken to greatly increase the assurance of survival of, say, the first two children as a result of better nutrition, the parents would feel much less necessity to have further children, and would accordingly be far more psychologically receptive to the ideas and methods of family planning.

In this connexion, it is appropriate to quote again from the same keynote address:

> The ultimate aim of development must surely be the improvement of what is increasingly coming to be known as the quality of life. And this is something which certainly cannot be achieved by economic growth alone, especially not economic growth as measured by national *per capita* income. Indeed, there are aspects of it which could be achieved faster and more effectively if planners were to devote more of their time to policies, such as nutritional policies, directly aimed at bettering social conditions. If the quality of life means anything, it means that human beings everywhere have the food they need to keep them in good health. This, to be sure, is in large part an economic question. But it is also much more than that. People have to be educated in the kinds of food that they and their children need. They can be educated too, in ways of producing more of this food at minimal expense.

It is this kind of education that must be built into all population policies and programmes, especially those concerned with the social aspects. They can succeed only by giving due emphasis to the prospects of better living for smaller families. National and international statistics, however gruesome they may sound, cannot be expected to influence the attitudes and actions of the millions of families or individuals. It is only when the problem is brought down to the level of the family and its welfare that the success of population policies and programmes can be assured. The process of development must also be "humanized", because it can be achieved only through widespread participation by human beings. Moreover, only "development with a human face" can appeal to the people at large, especially the young people who are increasingly questioning the very relevance of the development process itself. This participation cannot be secured unless the social aspects, especially those concerning food and nutrition, are taken fully into account and receive due emphasis.

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[3] (Rome, FAO, 1971).

FAO International and Regional Action Programmes

Several activities are in progress or under consideration to implement the mandate of FAO in the population field as reported to the Population Commission at its fifteenth session in 1969:

1. Research and informational activities concerned with the interrelations between population trends and food and agricultural development;
2. Work on projections of sectors of the population directly relevant to agriculture;
3. Motivational and educational activities aimed at promoting family planning, as part of general "Planning for Better Family Living (PBFL)".

Regarding research, there is continuing activity through various studies, as illustrated by the two FAO studies mentioned earlier. With specific reference to the PBFL programme, a research contract was negotiated with the Aquarius Research Corporation, University of North Carolina, with these objectives:

1. To develop feasible basic and action research for the PBFL programme;
2. To initiate a series of training programmes for practitioners and researchers in family and population problems;
3. To provide consultation to FAO headquarters and field staff regarding PBFL programme development and evaluation.

In the field of projections, FAO's estimates of population dependent on agriculture for various countries were revised recently; they cover the years 1950, 1960, 1965-1970, 1975-1980, and 1985. These are in addition to other projections, such as the commodity projections already mentioned.

With respect to international meetings, at the FAO Second World Food Congress (1970), one of the panels stressed that FAO should cooperate more fully with all other agencies in their efforts to frame suitable population policies. In this connexion, the opinion was expressed that the PBFL programme should be expanded. At the regional level, the FAO/UNDP Asia and the Far East Regional Seminar on Strengthening Family Life was held in the Philippines in 1971 with the following main objectives:

1. To focus attention on the relationship between rapid population growth and low levels of living among the families in the region;
2. To develop mutual understanding of FAO's concept of PBFL as a means of strengthening family life;
3. To formulate strategies for integrating PBFL into relevant programmes within countries of Asia and the Far East region.

The seminar was attended by 28 participants from 12 countries in the region and included home economists and/or officials responsible for family-oriented programmes. In addition, 21 observers from United Nations agencies and selected non-governmental international organization, besides 32 observers from national agencies and organizations in the Philippines, participated. Among the major recommendations was a request to the national planning bodies to consider incorporating PBLF into their efforts towards stabilization of population growth rates, as a positive educational measure to improve quality of living. This will be followed by the FAO/UNDP Asia and the Far East Seminar on PBFL Communications proposed for 1973.

It is also proposed to organize national training centres on surveys into interrelationships between family size and food consumption and related socio-economic factors (including attitudes and motivations) particularly in rural areas, in connexion with FAO's studies on food-population questions. It has been suggested that one such national training centre be held each year.

Since it is clear that better family life can be achieved only through co-ordinated efforts by policy-makers, planners and specialists in various disciplines, increasing efforts will be made to promote such co-ordination at the international as well as national level. Success will be assured only when all concerned grasp the fundamental aspects of the problem and work in harmony towards its early solution.

7. HEALTH ASPECTS OF FAMILY PLANNING WITH PARTICULAR REFERENCE TO SOCIAL DEVELOPMENT*

Persisting high fertility is itself a major health problem not only because it curtails socio-economic improvement essential for health, but also because of its immediate and personal impact on the health of the mother and her children. It is generally accepted that spacing is essential for optimum maternal and child health, nutrition and child-rearing.

Pregnancies in rapid succession increase the incidence of abortion, often performed by amateurs, which results in a serious health problem to the mother. Many women choose to interrupt their pregnancies and risk their lives rather than suffer the consequences of further unwanted pregnancies.

Not only are repeated pregnancies and lactation a drain on maternal nutrition, but they often result in pelvic pathology. Premature curtailment of breast feeding and of infant care by reason of an intervening pregnancy contribute significantly to a high infant mortality, not so often from frank starvation as from synergism between common infections and low resistance due to poor nutrition. Children who survive in families where too many children are born too quickly, tend to be exposed to inadequate nutrition and care and to permanent stunting of growth and development. The impact of family planning can be assessed not only by reduction in birth rates, but also by the number of maternal and infant deaths prevented and by improvements in maternal and child health.

Family planning involves the family as a whole and particularly affects the health and well-being of mothers and children. The health justifications for family planning include: reduced maternal and child mortality and morbidity; better child care and nutrition and, therefore, the quality of the new generation; and improved maternal nutrition and well-being.

The prevention of pregnancies in women who can be selected because they are exposed to a greater than average risk if they bear further children, is likely to be the most effective health intervention directly influencing both numbers of deaths and numbers of births. Women in these categories who become pregnant are exposed to a greater than average risk:

1. Parity greater than three;
2. Maternal age less than 20 or greater than 35 years;
3. Mothers with short intervals between pregnancies;
4. Previous abnormal pregnancies;
5. Mother with coincident or chronic diseases that threaten life; and,
6. Low socio-economic status, usually associated with one or more of the above.

Medical Care Complex

Medical care has been defined broadly as encompassing the complete range of personal health services: the promotion of health, the prevention of disease, the early detection of disease, diagnosis and treatment, and rehabilitation. These personal health services are produced, financed and delivered through a variety of activities in both the public and private sectors. The term "medical care" must be conceived, therefore, as embracing the entire pattern of personal relationships and organized arrangements through which health services are made available to the population. The three major components of the medical care complex are:

1. Personal, or the people needing health services, namely individuals and families who at some time in their lives, need and use the services made available through the medical care complex;
2. Professional, or the people who provide the health services; and,
3. Social, or the public and private organizations of the community that perform various functions designed to make the health services available to the population.

The interrelationships and interactions among these components provide the structure for the medical care complex, giving it form and outlining its functions. The principal interaction is always between the people needing the health services and those who provide them. This may be an intimate and personal interaction, as in the relationship between patient and physician, or indirect and somewhat impersonal, as in a mass immunization programme. Whether direct or indirect, however, the personal interaction involved in providing and receiving services forms the core of the medical care complex. People, as individuals, families or groups, need and use personal health services. Dispensaries, health centres, hospitals, etc., are the essential institutions or units through which personnel may be organized to provide services, where teamwork may be encouraged, and where many patients with a variety of conditions may be cared for efficiently and effectively.

Health services that are inadequate or ineffective in meeting the demands of the individual and community for the simple relief of symptoms and disability from ill-health will probably prove ineffective in providing family planning services. No mother is likely to accept family planning advice or services if, in the event of her surviving child, or children, falling ill, the child is unable to receive adequate medical care. The essential elements of good medical care are accessibility, quality, continuity and efficiency.

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Basic Health Services

Medical care for the family and the community is provided through a network of co-ordinated peripheral and intermediate units under a central administration, that is capable of effectively performing selected funtions essential to the health of a population, and of ensuring the availability of competent professional and auxiliary personnel to perform these functions. Such a network constitutes a basic health service.

Family planning may be introduced and developed through basic health services, particularly those providing:

1. Maternal and child health services;
2. Efforts to control communicable diseases;
3. Measures to improve environmental sanitation;
4. Collection of data and maintenance of records;
5. Health education of the public;
6. Public health nursing; and,
7. Services for medical care.

The advantages of channelling family planning through a health care system are multiple. Health workers have many opportunities to introduce the subject in the context of post-partum and post-abortal care, infant and child care, immunization, family counselling on nutrition needs, and in the management of special disease problems, such as tuberculosis. Basic health workers not only have access to people at critical times, but also have the ability to establish the intimate rapport with individuals that is so important in dealing with problems related to human sexuality. Furthermore, many types of health workers are now being trained and given experience in the personal and group education that is essential for the success of efforts in family planning.

Health Planning and Family Planning

Careful health planning is required to ensure the most judicious distribution and utilization of limited resources. Current estimates of the costs of a world-wide development of basic health services indicate that these are within the limits of available economic resources. Nevertheless, a variety of problems has to be solved and many questions answered that are fundamental to the provision of family planning services within the basic health services.

1. How far should and can Governments influence the rate of population growth by legislation, particularly punitive social legislation?

2. Does modern contraceptive technology provide a solution, even if it were conscientiously and consistently used by a majority of the community? Neither from the point of view of efficacy, acceptability nor availability does modern reversible contraception seem to offer a satisfactory solution for the next decade, unless both sterilization and induced abortion are also used.

3. A major problem is to provide contraception for those sections of the community, the rural, the illiterate and the deprived, that are in the majority and that are the most difficult to reach, the most difficult to convince of their need, and those suffering most from the ill-effects of poor sanitation, malnutrition, etc. Therefore, is it justifiable to complete coverage of a population with family planning services without at the same time, providing comprehensive basic health services? If family planning services are to be provided outside or in addition to the basic health services, how is this to be achieved?

4. From the socio-economic point of view, a case can be made for concentrating resources on informing and educating the public; while contraception is made easily available through a variety of sources, including commercial channels, and without necessarily making statutory the need for prescription by professional personnel.

5. Sooner or later the availability of contraception and the conversion of the public to accept it create a demand for induced abortion, a problem that arises from the inadequacy of presently available contraceptive technology poses still more work for the health services.

6. Close co-ordination and co-operation is needed between the various national ministries and agencies responsible for family planning programmes, to ensure that professional and supporting manpower is adequate and that funds are provided within limits set by national priorities, not only for development and expansion but also for maintenance and recurring expenditure. Optimum use of the available manpower and material resources can only be made by eliminating duplication of effort.

7. How much should the medical profession be involved with policy-making in connection with population growth? Their role should perhaps be confined to providing technical advice and delivering services rather than to determining national policies.

8. Generally, the supply of health personnel is inadequate to meet national requirements and the

distribution is such that there is a gross imbalance between those available in large urban communities and in rural areas. Systems of medical education are mainly designed to prepare specialist curative physicians rather than those concerned with public health, community medicine including family planning and disease prevention. The aim of systems of educating health personnel should be to bring preventive community medical care, using appropriately trained staff, to the majority of people in rural communities. The role of the doctor in the health team should be clearly defined so that his education is most suited to providing proper preparation for his duties.

9. Because of the present stage of development of contraceptive knowledge, the burden of preventing unwanted pregnancies is placed on females. This and other factors necessitate a reconsideration of the status of women in a community and provision for their useful employment in occupations other than child-bearing.

8. POPULATION CHANGE AND HEALTH DEVELOPMENT*

As is well known, most population, until comparatively recently, tended to maintain a very slow but relatively constant rate of growth. Short-term fluctuations in growth rates did occur. These would seem to have been due mainly to such hazards as pestilence, famine, war and other catastrophes. Man had little control over his environment and was, from time to time, exposed to periods of high mortality, or implicitly to inadequate health development.

More permanent control over the environment began to be established in Europe in the eighteenth and nineteenth centuries, although this (initially at any rate) bore little conscious or deliberate relationship with health development.

Figure 1 illustrates the situation in England and Wales from around the middle of the eighteenth century to the middle of the twentieth century.

The population was thought to be around 6 million in 1740 and was almost entirely rural. Eighty per cent were village dwellers. London, with some 500,000 people, was fourteen times the size of the next largest town. Only seventy-five years before, 80,000 people in London alone had died of plague. The birth rate in 1730 was thought to be about 32 per thousand population and the death rate appeared to be of almost the same magnitude. Infant mortality seemed to be about 200 per thousand births.

Between 1740 and 1750, the difference between death rate and birth rate began to change and, as can be seen in Figure 1, there was initiated a long and sustained period of population growth. By 1801, the population was believed to be 10,501,000. This was the year of the first census. Between 1801 and 1821, the rate of increase of population was 34 per cent. Between 1821 and 1841, it was 32 per cent. Between 1841 and 1861 it was 25 per cent. More pronounced declines then took place to the present day. It should be noted also that by 1850 one-half of the population was urban.

There has been some argument as to the various reasons for the rapid (for these days) increase in population. What can be said, however, was that the growth rate owed little to the introduction of planned medical and health measures prior to and over the period of maximum growth. Despite this, it is now believed that a *fall* in mortality rate rather than an *increase* in birth rate (or fertility) was the main factor in producing the very considerable population change. At this time, the reasons for this fall must have been due to changing economic or living standards. In 1778, Gilbert White, in *The Natural History of Selborne*, noted:

> Agriculture is now arrived at such a pitch of perfection that our best and fattest meats are killed in winter.
>
> As to the produce of a garden...both in town and country, how vastly the consumption of vegetables has increased...Every decent labourer also has his garden...and common farmers provide plenty of beans, peas and greens for their hinds to eat with their bacon.

Reflecting changes in the conditions of working men in the towns, it was estimated that nearly one million persons were enrolled members of friendly societies by 1815. In effect, this meant that wages were of such a level that some 60 per cent of the adult urban workforce[1] were apparently able to make regular savings out of income.[2]

Almost the only claim that could be put forward at that time for health development was Jenner's discovery of smallpox vaccination. Improved nutrition was not then a deliberate measure of health policy. Medical care still largely belonged to the Middle Ages.

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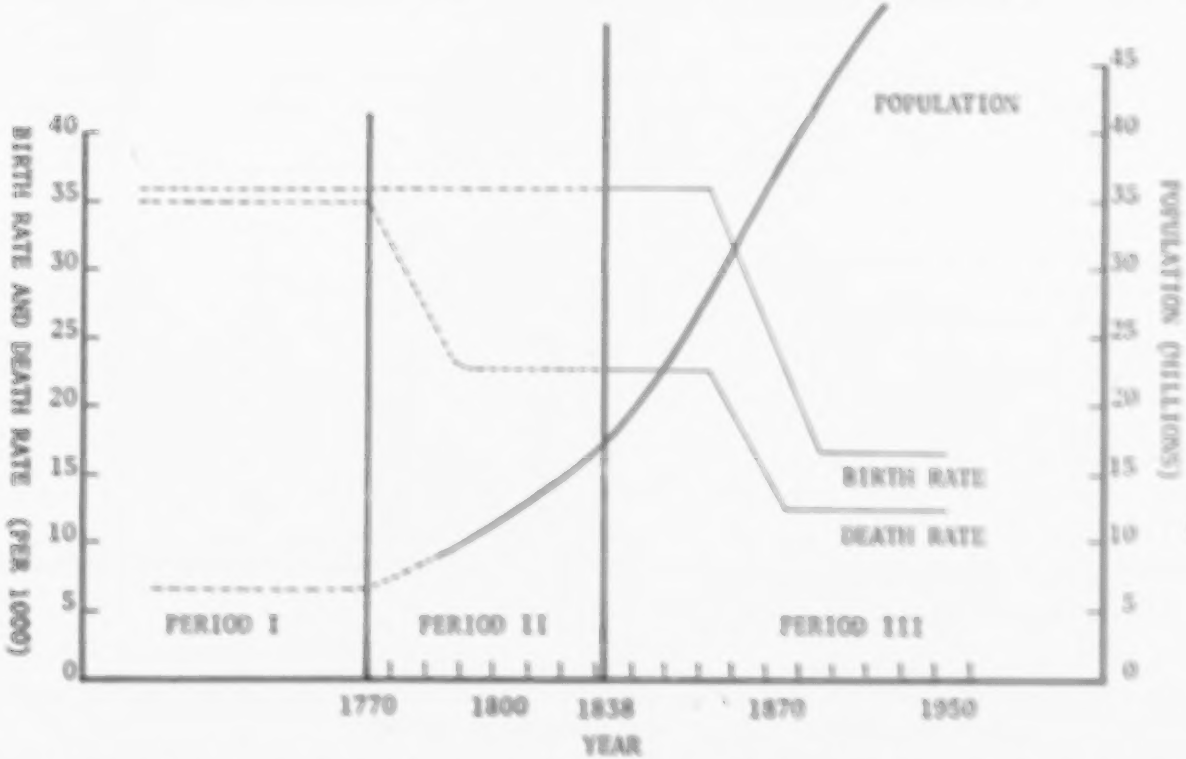
[1] On the basis of an urban population of about 3.5 million in 1815 and with the work force equalling about half of this.

[2] Court, W.H.B., *A Concise Economic History of Britain*, (Cambridge University Press, 1958), p. 134.

Figure 1.

Diagrammatic representation of birth rate, death rate and population in England and Wales since the eighteenth century.



Source : McKeown, T., "Medicine and world population", in *Public Health and Population Change* (University of Pittsburgh, 1963).

The improvement in the general standard of living albeit subject to fluctuations from time to time, continued throughout the nineteenth century.

As Court has noted:

> One striking feature of the prosperity of the nation after 1851 was that it seemed to extend to all classes. Agriculture was making money.....Rents had risen.....The picture presented by the rural and urban middle class.....was one of great wealth and power.
>
> However...... the improvement of conditions among wage-earners appeared even more significant.....First, a great mass of new and better paid employment had come into existence and many now found employment at higher scales of wage or salary. Secondly, even when a man had not changed his job, his money income in many employments had so increased...that his real earnings were above what a man of the same age would have earned forty or fifty years before.[3]

This same prosperity was responsible for a second major decline in the death rate. By the 1870s, the greater proportion of the population had shifted to the towns. There was a demand for improved environmental conditions. The funds were available to finance schemes of sanitation and water supply for the cities and new towns. In 1875, the social reformers succeeded in passing a strong and revolutionary Public Health Act, which gave the necessary impetus to environmental improvement. Again, it should be noted that medical measures by doctors and hospitals had little influence on the decline in mortality. Table 35 illustrates this clearly.

As can be seen, the death rate for tuberculosis declined by 47 per cent between 1851 and 1900. There was no known therapeutic remedy for tuberculosis for many years *after* this period. The change can only have been due to improved living standards. Enteric fever, diarrhoea, dysentery, cholera and typhus (all diseases due to insanitary conditions) also declined quite considerably, although the real improvements in environmental control did not really have much effect until after 1875.

It is notable that children's diseases (measles, whooping cough, diphtheria) were little affected. These diseases

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[3] *Ibid.*

Table 35.

Mean annual mortality rates per million[a] due to certain communicable diseases in decennia 1851-1860 and 1891-1900

Cause	1851-1860 (a)	1891-1900 (b)	Difference (a)-(b)	Difference per cent of Total Difference $\frac{[(a-b)]\ 100}{3{,}085}$	
Tuberculosis - respiratory.	2,772	1,418	1,354	43.9	47.2
Tuberculosis - other forms.	706	603	103	3.3	
Typhus, enteric fever, simple continued fever	891	184	707	22.9	
Scarlet fever	779	152	627	20.3	
Diarrhea, dysentery, cholera	990	715	275	8.9	
Smallpox	202	13	189	6.1	
Whooping cough	433	363	70	2.3	
Measles	357	398	–41	–1.3	
Diphtheria	99	254	–155	–5.0	
Other causes	13,980	14,024	–44	–1.4	
Total	21,209	18,124	3,085	100	

Source : McKeown, T. and Record, R.G., "Reasons for the decline of mortality in England and Wales during the nineteenth century", *Population Studies*, vol. XV, 1962, pp. 94-122.

[a] Standardized to age and sex distribution of 1901 population.

have only responded to specific therapeutic measures made available around the second half of the twentieth century. In fact, infant mortality remained the most intractable of all preventable mortality.[4] In the early 1900s, about 150 children in every thousand born were still dying before achieving a whole year of life. This figure had fallen to 30 by 1950 and has only recently dropped below 20.

In the twentieth century, mortality declined due to a combination of factors. Environmental control of water and sewage was maintained at a high level. Preventive care of vulnerable groups (women and children mainly) reduced many deaths due to child-bearing and conditions of infancy. Surgical treatment became exceedingly effective. Finally, specific immunization procedures and the more widespread use of antibiotic and similar drugs reduced deaths at all ages.

Nothing has yet been said about the effect of health development upon fertility in the context of population change in England and Wales. It is unlikely that health development had any appreciable effect on over-all fertility. Even if there was an effect, it was of negligible importance compared with other factors. Only in the twentieth century has it been possible deliberately to render infertile women fertile, but this is yet more a matter for newspaper comment than for any specific impact on population.

The interaction between population change and health development in many developing countries starts with a vastly different time scale. A useful example for study is that of Sri Lanka (Ceylon), where a well-developed vital registration system has been operating for many years. The average death rate for the period 1930-1945 was around 21.8 per thousand. It had varied very little over the period except during a severe malaria outbreak in 1935. The birth rate in 1932 was 37 per thousand and in 1941 was 36.5 per thousand. Population was approximately 5,386,000 in 1932 and reached 6,020,000 in 1941, averaging roughly an increase of about 1 per cent per year. The infant mortality rate in 1932 was 162.3 per thousand births; by 1941, that reached 129.4. The population distribution, according to the 1946 estimate, was about 80 per cent rural and 20 per cent urban.

By 1949, less than ten years later, the crude death rate was 12.6 per thousand, the birth rate was about 40 per thousand, and the population was estimated at 7,297,000, with an average rate of growth (in 1948) of some 2.74 per cent. The trend in mortality, adapted from the United Nations *Demographic Yearbooks*, covering four separate periods, is shown in table 36. Three of the four periods were census years.

Between 1946 and 1953, it can be seen that the crude death rate had dropped by no less than 47 per cent; between

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[4] In spite of the general prosperity, social conditions among the poorer classes were exceedingly bad : see such writers as Llewellyn, G D.H. Cole, the Webbs and Rowntree.

Table 36.

Sri Lanka (Ceylon): Death rates by age groups per thousand population of some age

Year	Age Group										
	0-4	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65 and Over	All Ages
1946	67.9	7.0	3.4	5.1	8.6	9.9	12.0	17.2	29.6	97.9	20.3
1953	33.1	3.3	1.4	2.0	2.8	3.5	4.8	11.4	16.9	74.8	10.7
1955[a]	47.5	3.4	1.3	1.5	2.7	3.1	4.0	7.5	19.2	148.2	10.8
1963	20.2	2.0	1.1	1.5	2.4	2.8	4.1	7.2	15.4	76.7	8.7

Source : *Demographic Yearbooks 1951, 1957, 1967* (United Nations Publications, Sales Nos. : 51.XIII.1; 57.XIII.1, 68.XIII.1).

[a] Estimated mean population. This gives a population in age group 65 and over of 165, 524 in 1955 as compared with a 1953 census population of 283, 821.

1946 and 1963, the rate had dropped by 57 per cent. This decline, from about 20 deaths per thousand to around 10.8 per thousand was achieved in 68 years in England and Wales, as compared with 7 or 8 years in Sri Lanka (Ceylon). It can be observed also that the decline in rates affected all groups of the population. In general, rates were more than halved for age groups up to 45 between 1946 and 1953. For ages 45-64 the rates were reduced by around 39 per cent. Even for ages over 65, the rate came down in 1953 by about 25 per cent. These declines have tended to continue, although at a somewhat reduced speed. It is important to note that lives have been prolonged not only in infant and child groups, but have been prolonged proportionately among the greater part of the *working* population. However, lives among the aged (dependent) population have *not* been affected to the same degree.

During this period from 1946 onwards Sri Lanka (Ceylon) was and has remained, largely, a country that produces primary goods. Its principal products are agricultural and its main exports are tea and rubber. Estimating *per capita* national income at market prices for the years 1950, 1953 and 1964, the figures are respectively Rs. 486, 525 and 601.

It is quite obvious that rapid economic development has played little part in bringing about the change in mortality in this instance.

Table 37 shows the changes in mortality among major causes of death in Sri Lanka (Ceylon) between 1947 and 1958.

It can be seen that striking reductions in mortality occurred mainly in malaria, respiratory tuberculosis, pneumonia and diseases of infancy. It may further be noted that intestinal or enteritic diseases showed a much smaller change.

Sri Lanka (Ceylon) indeed, is an excellent example of the effect of rapid health development, using modern technology (DDT and antibiotics), on a population without expending large capital sums on conventional environmental control.

It is argued by some that such speedy change may well have a deleterious effect on general development, in that the rate of growth of population, particularly in the dependent age groups, is likely to use up resources required for capital formation, investment and education. It is indeed true that health development does increase dependents, although it would seem only marginally among the oldest age groups. On the other hand, it would seem to make a larger and healthier work force available. This too gives rise to criticism in that a large proportion of the work force is often unemployed. However, where the unemployed depend on relatives, it is surely less costly to look after a healthy unemployed person than a sick one. There is always the prospect also of economic development speeding up. A sick labour force is of less value than a healthy one. In regard to the matter of unemployment in developing countries, it is probable, in any case, that this is less than was formerly believed.[5]

Finally, the effect of health development on the economy itself can be stimulating. A study of Sri Lanka's general development during the period of rapid health development[6] suggests that health expenditures had more effect on improving national income than investment.

In the longer term, however, it would seem that

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[5] See Schultz, T.W., *Transforming Agriculture* (Yale University Press, 1964); Griffith D.H.S. and Ramana, D.V., *Studies on Health Planning* (Bangkok, Asian Institute for Economic Development and Planning, 1969).

[6] Griffith and Ramana, *op. cit.*

Table 37.

Principal causes of death (per 100,000 population), Sri Lanka (Ceylon), 1947-1958

Cause of death	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958
Respiratory tuberculosis	51.0	53.2	53.0	49.0	46.4	35.4	27.0	21.0	19.1	15.4	18.0	18.2
Malaria	66.3	47.3	32.9	26.2	20.7	13.2	8.9	5.3	3.1	1.6	1.9	1.1
All other diseases classed as infective and parasitic	88.8	85.2	80.7	75.2	80.4	76.9	65.0	67.1	68.3	55.1	56.9	50.9
Pneumonia	123.3	114.3	99.3	98.8	102.6	86.7	78.4	70.4	73.1	63.1	73.6	61.1
Gastritis, duodenitis, enteritis and colitis	69.8	71.1	69.5	46.5	47.7	42.8	43.9	52.3	62.4	41.8	46.2	56.8
Birth injuries and other diseases peculiar to early infancy and immaturity	217.7	205.0	187.8	156.1	160.3	154.0	143.2	120.3	123.7	117.5	114.0	109.0
Senility and ill-defined conditions	214.4	189.0	195.4	221.7	234.3	234.7	221.1	198.1	214.7	210.4	210.9	201.9
Accidents, etc.	50.7	45.3	44.5	42.5	44.6	42.5	42.9	42.8	42.2	42.4	43.2	47.5
All others	550.5	512.1	466.2	545.2	555.6	514.0	461.0	457.8	475.2	433.3	447.4	410.9
All causes	1432.5	1322.5	1259.3	1261.2	1292.6	1200.2	1091.4	1035.1	1081.8	980.6	1012.1	967.4
Total all principal causes	882.0	810.4	763.1	716.0	737.0	686.2	630.4	577.3	606.6	547.3	564.7	546.6

Source: *Demographic Yearbooks 1951, 1957, 1961* (United Nations Publications, Sales Nos.: 51. XIII. 1, 57. XIII. 1, 62. XIII. 1).

initial investment in health development should be accompanied by investment in control of population. Jointly, it is likely that until such time as other slower acting mechanisms can bring about continuing desired change, a more rapid over all development effect could be achieved by this means. It is fortunate that the forces that bring about improved health development are the same as those that can effectively control population.

9. POPULATION CHANGE AND SOCIAL MOBILITY*

The topic of this paper brings together some confounding aspects of social development as well as of social research. Population change and social mobility are so interrelated that neither can be taken as a purely dependent or independent variable. Furthermore, they both interact in the central topic, i.e. social development, in complex ways.

The formulation of the agenda of the seminar correctly indicated the interrelation of the topics being considered and their equivalent logical status. In every case, the elements for discussion are listed additively. No *a priori* hierarchy of causation or attention is implied. Investigation of the influence of any one upon the other is equally plausible, and this is certainly the case with population change and social mobility. For, example, as is well known, social development (including economic development) sets in motion forces that change population composition and distribution by altering mortality and morbidity rates and inducing migration. In the first place these population changes increase the potential field of candidates for given occupations. Secondly, expansion of schools and increased literacy raise the qualifications of candidates. (The articulation between qualification and job is always problematic but particularly so in developing societies.) Thirdly, industrial and economic expansion create selective manpower demands that fundamentally change the structure of opportunity.

The same kind of linkages can be shown if population or social mobility variables are taken as the points of departure. For instance, it may be hypothesized that the most mobile parts of the population experience the most drastic demographic changes, which result in altered household composition and dependency ratios. Differential dependency ratios condition the readiness and ability of different population segments to profit from opportunities for social mobility.

Parameters of Social Mobility

Social mobility can be divided according to several parameters.

1. Volume

The amount of mobility in a society is compared with the number of persons immobile between two or more specified times. All techniques of measurement in use record net rather than gross mobility, i.e. they understate the true amount of mobility. Except in detailed life histories, it is impossible to record socio-economic status at more than a very few periods. Customarily, only two or three points in time are identified, and intervening, antecedent or subsequent changes are therefore not revealed. These objections and limitations present problems in the analysis of societies characterized by relatively orderly occupational careers; but, in developing societies where many events affect careers in unanticipated ways and where a great deal of mobility is exploratory and experimental, the limitations enumerated above are more serious. The understatement of true mobility in developing societies is probably far greater than in developed societies.

2. Interval

Career mobility is scrutinized over part or all of the individual's life experience. Conventionally, his status upon entering the work force is described and a second reading is taken later at some arbitrary time, such as the date of the survey, when he held his best job, or at a specified age presumed to correspond to peak employment status. If the person has left the work force, his last full-time job is sometimes recorded.

Generational mobility examines the amount of mobility between father and son, or, theoretically, a more remote ancestor. This kind of mobility analysis is complicated by reliability and validity problems: the evidence is largely retrospective, sometimes not from living memory, and the matching of career points between the son and his father (or grandfather) further complicates comparisons. In addition, although the study of a career, even a long career, can be considered as a continuous evolution of an individual's response to an environment of opportunity, the same kind of continuity cannot be assumed in assessing mobility between the generations. The standing of a given occupation in developed societies may have a high degree of prestige stability over a long period, as is suggested by occupational prestige studies. In rapidly changing societies however, it may be more difficult to compare a father's career with his son's, and even specifically named occupations may not be the same thing in the son's career as in the father's.

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3. Amplitude

A third parameter measures the social distance between the statuses of origin and destination. Most research has been limited to a tripatite division of farm, manual and non-manual. Other studies that are restricted to urban occupations simply, divide blue collar from white collar. It is desirable to extend mobility research to include a sufficient number of positions so as to gain some measure of the social distance traversed; and, especially in developing countries, the assessment of long compared with short social-distance mobility would uncover important facts about the organization of the society.

4. Type

Mobility can be further classified as structural or circulation. *Structural* mobility is impelled by the changed requirements of the economy, a predominant feature of developing societies. In *circulation* mobility, a changed status is achieved directly through the displacement of others.

5. Situs

To this point, the discussion has made it seem as if mobility consisted entirely of movements between differentially ranked positions. This obviously is not the case, and, particularly in developing areas, lateral movements between what has been called situses may be quite as important as vertical movements. In developing societies, some situses or aspects of situses are characteristically traditional in their occupational and social components, and others are relatively modern. This is a clear case where ideas derived from studies of advanced societies need to be qualified before they are applied to developing societies. It is an empirical question whether it would be more efficient to partition situses into traditional and modern components or to take traditional and modern sectors as the master categories and divide them into subfamilies of situses. The important thing is to allow for the distinction, because the idea of situs alerts consideration of the differing possibilities and consequences of lateral movements in different kinds of societies.

In the study of situses, the notion of bridging occupation is pertinent. *Bridging* occupations are those that provide, through work experience, the conditions and opportunities for movement from one occupation or cluster of occupations to another. Teaching and military service are among the occupation clusters in developing societies that have frequently contributed personnel to other kinds of work, and close study of such occupational groupings may assist societies in forecasting the sources from which specialized personnel can be most efficiently recruited.

Social Development and Opportunity Structures

Social development makes its most obvious impact on the gross opportunity structure by reducing the predominance of primary industry and by increasing the diversity of positions to be filled. Traditional occupations survive while occupations characteristic of developed societies are introduced. Furthermore, the process of development inevitably generates turbulence because customary expectations are thrown into doubt and a relatively large number of careers are exploratory and do not follow anticipated paths. In addition, the questioning of traditional preconceptions and the loss of ascriptive sanctions may cause a larger amount of circulation mobility than would be expected either in a traditional order or a mature developed society. These conjectures are offered for consideration not as fact. They probably apply rather generally in the earlier stages of modernization. At later stages, a decline in fresh opportunities, especially at the upper levels, and the attrition of the traditional system may reduce net opportunities for status improvement and cause deep social tensions and possibly political unrest. Evers (1966) suggested that rather high mobility in the initial stages of modernization in Thailand may have been followed by the formation and consolidation of a bureaucratic elite that maintained a high birth rate and had internal recruitment and controlled access to overseas education. This observation suggests that the family planning of higher as well as poorer social strata should be the concern of responsible agencies.

The Cohort Problem

In addition to a high elite birth rate, other distinctively demographic factors play a significant part in inhibiting social mobility. If an initial period of rapid economic growth is followed by slower growth or stability, expanding structural opportunity will be followed by a stage of restricted mobility, especially if class consolidation takes place and circulation mobility is thus minimized. But in any event, in the short run, the age characteristics of recent recruits to developed-occupation statuses will minimize replacement opportunities. Consequently, the skilled, especially the upper white-collar, sectors of the work force may show strong age-cohort characteristics.

When, after a period of years, replacement occurs, it will have a high degree of periodicity and will again tend to assume the cohort form. Unless there are drastic further changes in the opportunity structure due to renewed expansion, the replacement cycle will show a progressively muted sine-wave pattern. (Note the analogy to fluctuations attending a stabilizing population). Such cohort patterning probably works against the recruitment of new talent and orderly training and replacement of personnel. It increases the likelihood of the formation of class patterning of vested interests, stable coalitions, age-stratified conflict, unduly deferred advancement, and frustrated expectations.

The foregoing observations suggest that attention should be given to the age composition of new-skill specialists and technicians and administrators. From the standpoint of work force planning, careful estimation and projections should be made of specialist requirements and if possible, the age composition of recruits should be taken into account in order to attenuate the severity of the age-cohort phenomenon.

Classification and Documentation

One characteristic of developed societies is a form of bureaucratic organization that compiles social documentation essential to the operation of the system. On the other hand, developing or traditional societies are ordinarily not organized to assemble such data, and genuinely comparable information is hard to come by. As social scientists in developing societies begin to assemble their own data, they are constrained to use the same categories as their counterparts in developed countries, but this is not a matter of slavish imitation. The models are frequently offered by Western consultants as having stood the test of time, and it is assumed that desired comparability is achieved when similar categories are used. Furthermore, it is considered wise to choose units of classification that will be continuously usable in later stages of development.

Nevertheless, the ready acceptance of classifications derived from the experience of advanced societies is of doubtful merit. Important distinctions such as between subsistence and market agriculture are obscured, and significant indigenous variations tend to be thrown into residual categories. The result is the loss of important knowledge necessary for coherent planning and for understanding differences as well as postulated tendencies toward convergence.

It is not intended here to propose a unique classification for each country. In that direction lies utter particularism. What is urged is more attention to identifying social and economic categories appropriate to the developing country. This might be accomplished by carefully disaggregating internationally accepted categories, which could be preserved in broad schematic form for general trend analysis and international comparisons. But even then, variation in the elements subsumed under a given category should be specified in detail. Standardization is urgently needed, but not at the sacrifice of valuable information.

Problematics

Fuller use of labour market analysis would permit direct and detailed identification of changes in the structural conditions for mobility. (This would be a useful supplement and corrective to accepting differences in the marginals of a mobility table as indicators of structural change). Occupations are in fact the embodiment of structural conditions and the location where mobility-relevant behaviour is acted out. What is more, they contain within themselves decisively significant conditions for further mobility as is suggested in the idea of bridging. The analyst needs an opportunity to trace out specific mobility pathways.

A second largely neglected task is the systematic assessment of work in the individual's daily round. It is occasionally observed that work in some traditional settings has less periodicity than in developed societies. Systematic use of time budgets would help to specify the facts and the trends in different sectors of the world of work and their bearing upon motivation towards and preparation for mobility.

The most dynamic stage of the demographic transition tends to coincide with the early and middle stages of development. Therefore, population expansion at an inopportune time imposes maximum strain on the capacities of the society to allocate its resources and co-ordinate its manpower. This is one reason for the growth-at-all-costs strategy of many developing countries. A high rate of economic growth can help to cope with the pressures of an expanding and dislocated work force, but economic growth is a defensive manpower strategy. Although a gratuitous observation, it must be said that slower rates of population growth vastly increase the possibilities for coherent labour mobilization, the efficient recruitment and training of personnel, and the orderly circulation of talent.

Elites are always in an advantageous position because of their greater access to channels of influence and educational opportunity and because they can afford to hold children out of productive employment during a period of prolonged education. Given their higher survival rates, if elite birth rates remain high, cohorts of elite children may saturate the preferred positions in the labour market. Mobility of new recruits into upper levels may then become difficult or impossible, thus impairing the ability of the society to make the most of its talent and to reward the legitimate aspirations of its young. It goes without saying that this view espouses the value premises of the open-mobility model and stresses that there are objective reasons for favouring the model.

In conclusion, a problem of profound philosophical import that is linked to the choice of measures and indicators needs indentification. Underlying the acceptance of indicators derived from the study of technologically advanced societies is a tacit assumption that the direction of change is determined, that "growth" as it has been experienced in the West is good, that traditional technology and modes of organization may be sacrificed to increasing a GNP that maximizes material production. This amalgam of methodology and valuation, which could be called modernizing determinacy, assumes that traditionalism is expendable in the cause of growth.

There are many societies of such small scale and weak differentiation that they could not survive the press of the technological age except in a kind of sociological zoo and then at unacceptable costs to their populations. But the same cannot be said of the sophisticated traditional societies of Asia and the Far East. If there are to be any alternatives to technological and cultural homogeneity, constant attention must be given to identifying and fostering traditional skills, for imbedded in them are optional solutions to enduring problems and perhaps models for survival. Responsible social bookkeeping is a precondition to such identification. This is a compelling reason why mobility and labour force analysis should comprehend traditional occupations and traditional modes of stratification and organization. And they should be taken into account as something more than wasting residual categories.

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10. POPULATION CHANGE AND EDUCATIONAL DEVELOPMENT*

Education is not only a fundamental human right but it also has been recognized as a vital force in economic and social development. In all countries, developed and developing, enrolment has been increasing markedly in the postwar years. The factors that influence enrolment are demographic trends, social demand, manpower needs and government policy. Although in this seminar attention centres on the demographic factor, it should be emphasized that all of these factors depend on each other to some extent and their combined effect has produced the education explosion of the last two decades.

A survey of education in Asia during the last two or three decades shows a dynamic and varied scene of small educational systems, limited in their purpose and scope, growing into major national endeavours, and of new opportunities being created where few existed before.

The evolution of education systems is moulded by the interplay of a variety of pressures: the economic needs of society, the movement of social and cultural aspirations, and the forces that have their origin in the education system itself. The economic, social and educational factors are constantly changing and their influence is not the same at different levels or types of education. Planning for the decade ahead, while necessarily based on the progress achieved so far and the existing constraints, has also to embody perception of a future that will be dominated by an accelerating pace of change.

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The level of economic development is rising, and significant structural changes in the economy are underway, with the industrial sector assuming an increasingly dynamic role in economic development. These economic changes define new needs for skills and special training and point to the link between education and manpower requirements and human resources development.

The social factors influencing and moulding education find expression in a variety of ways. First is the demand for education as an increasing proportion of the population aspires to gain access to educational opportunities. The explosion of educational aspirations is one of the striking features of the social scene in the developing countries, and indeed all over the world, and creates the dominant pressure for educational expansion.

These social forces are also articulated in the search for broader social objectives: reduction in income and social inequalities, equitable distribution of development benefits, maximization of employment opportunities, and population control and family planning.

Another no less fundamental aim of educational development is the transmission and enrichment of common cultural and moral values. Education is not only a medium for the transmission of these values from one generation to another; it is an expression of a continuing revaluation of values in order to make culture a living and growing tradition.

The above set of considerations shows that considerable changes in the field of education will take place on the Asian scene in the course of the next decade and that these changes must be viewed in combination as they are bound to have cumulative effects. The expansion of school enrolments should be expected to change the very nature of education. This expansion should be accompanied by corresponding qualitative improvement, which is required for ensuring the efficiency of education systems.

The large size of the population, with its rapid growth, youthful age structure and rapid rate of urbanization, is the prominent demographic feature of the Asian region. Its characteristics provide the points of reference to assess the progress of education achieved so far, as well as to define the magnitude of the educational effort that lies ahead.

The aggregate figures used to illustrate educational expansion refer to the UNESCO Asian region, comprised of eighteen developing countries participating in the *Karachi Plan* and in the *Asian Model of Educational Development* (1965-1980).

The total population of the region in 1970 was estimated as 1,072 million. It has been increasing at a rising rate: 25.6 per cent between 1950 and 1960, 30.0 per cent between 1960 and 1970 and 31.7 per cent expected increase during the present decade.

The primary school-age population, 5-14 years, is expected to increase even faster: 36.6 per cent during the 1970s. According to United Nations projections, out of a total increase of 185.4 million primary school-age children, 182.3 million will be in the less developed regions and of this 101.5 million will be in the Asian region.

An increase of this order in the primary school-age group will require an increase of over 50 per cent in schooling facilities in about 15 years *just to maintain the enrolment ratios at the existing level.* In most countries of the region, the existing enrolment ratios have to be raised substantially in order to provide access to education to children not now receiving schooling. Even while the countries raise the proportion of educational expenditure in GNP, expenditure *per head of school population* can rise, if at all, only marginally. The educational effort called for is therefore magnified by the high rate of population increase.

The growth of education in the region has been impressive in the last two decades; but even more striking is the magnitude of expansion and change that is anticipated for the decades immediately ahead. Many countries have large sections of the population who have yet to gain access to even elementary education and literacy; in all countries, the participation rates at the second and third levels will continue to rise, particularly in types of education where the unit cost is also higher, e.g. technical and vocational education. To these trends are added the consequences of rising rates of population increase. All these factors combine to create an increasing strain on both financial and educational resources.

Educational Attainment and Literacy

Estimates prepared by UNESCO indicate that over one-half of the adult population (age 15 years and over) is still illiterate. In 1970, the adult illiteracy rate was estimated at 58 per cent, thus showing a considerable reduction from 66 per cent in 1960, and 76 per cent around 1950. But the rate of increase in literacy did not keep pace with the population increase and the absolute number of illiterate adults continued to grow. In 1950, this number was estimated at 307 million, rising to about 322 million by 1960 and 355 million in 1970.

Overall Enrolment Growth

Enrolments at all levels more than tripled during the period 1950 to 1970. The rising trend is illustrated by the net addition: 40 million during the 1950s, 72 million during the 1960s, and 136 million expected addition during the 1970s, if the *Asian Model* projections are followed.

In terms of the population age group 5-24, school enrolment has shown a steady increase: 17 per cent in 1950, 25 per cent in 1960 and 34 per cent in 1970. According to the projections, this proportion will rise further, to 46 per cent, by 1980.

These figures clearly indicate that, in spite of rapid population growth, education facilities have been extended to cover a larger segment of the relevant age group. But there is a long way to go. The present enrolment ratio of 34 in the Asian region is less than one-half of that of northern America and western Europe. The demographic factor is not making the task easier for the developing countries. It is estimated that 40 per cent of the enrolment increase in the Asian region during the 1960s was due to the demographic factor alone; a similar situation applies to the present decade.

The impact of the demographic factor varies with the level of education already achieved, particularly with reference to the goal of providing universal primary education to which all countries are committed.

In areas where this goal has been achieved, further expansion of enrolment at this level depends solely on the demographic factor. In western Europe, for instance, the annual increase in primary enrolment has been of the order of 0.6 per cent during the years 1960 to 1968 compared with 4.0 per cent in Asia.

Japan provides a recent example of the effect of a fertility decline on school enrolment. In Japan, compulsory education is for nine years, covering both primary and lower secondary school. Compulsory education was implemented long ago, yet enrolment was over 4 million less in 1970 than in 1960, a decrease of 23 per cent. In contrast, upper secondary enrolment increased by 31 per cent and higher enrolment by 136 per cent.

In spite of a decrease in enrolment at all levels, Japan maintained, and even increased slightly the level of expenditure on education during this period. Pre-school and out-of-school education are growing fast in Japan today. Free from the pressure of mounting enrolments, the developed countries are able to allocate resources to extending the scope and improving the quality of education, even if they maintain an almost constant level of educational expenditure on national income.

During the present decade, the *Asian Model* envisages the following improvement in enrolment ratios for the region as a whole: 72 to 90 per cent at the first level; 20 to 33 per cent at the second level; and 4 to 5 per cent at the third level.

However, there are considerable differences in the educational level achieved by the countries concerned. In 1969, 9 out of 18 countries of the region had achieved enrolment ratios at the first level of 90 per cent and over, 5 countries were in the range 60 to 89 per cent, while the remaining 4 were below 50 per cent. It should be noted that, for many countries, these ratios are overestimated by something between 10 and 20 per cent as enrolment includes a varying proportion of children below or above the age range for school.

Despite the rapid improvement achieved and envisaged for the present decade, by 1980 there will still be large numbers of children who do not complete primary education.

Wastage in the form of repetition of grades and dropping out continues to be the most important problem at the first level. Less than one-half of the children entering grade I fail to reach grade IV while less than two children in ten reach the first year of secondary school.

Although considerable progress was achieved during the last decade, enrolment of girls continues to lag behind that of boys. In 1969, the overall enrolment ratio for girls was 26 per cent and 40 per cent for boys.

A problem of central concern to national authorities is the need to expand vocational and technical education. Its share at present is about 5 per cent of second level enrolment. The *Asian Model* calls for rapid expansion; by 1980, vocational/technical education will account for 22 per cent of total enrolment at the second level.

In higher education, the main trend is for an increase in the share of enrolment in scientific disciplines and to expand facilities for post-graduate studies.

The expansion of the education systems has called for a sharp increase in the supply of qualified teachers at all levels of education. In the period 1950 to 1970, the total number of teachers more than tripled from 1.4 million to 4.5 million. A net addition of 3.1 million teachers is required to meet the enrolment expansion envisaged in the *Asian Model*. It should be noted that the assumed pupil-teacher ratios are fairly high: 45:1 at the first level, 30:1 for lower secondary, 25:1 for upper secondary.

In spite of an increase of this magnitude in numbers of teachers, the supply of teachers has not in general kept pace with enrolment growth. As a consequence, the pupil-teacher ratios have deteriorated. Furthermore, the output from training institutions is insufficient and the number of unqualified teachers continues to grow. In 1965, nearly one-third of the teachers in primary and secondary general schools had qualifications below full secondary education. Pre-service and in-service training programmes for teachers are increasing in scope and in quality as national authorities recognise the central importance of teachers in raising the quality of an education system as a whole.

Financial resources is the number one constraint to educational development. Countries are devoting to education an increasing percentage of the GNP but national budgets are already under strain and this strain will grow. Alternative sources of educational finance must be found. A main suggestion in this regard is a greater mobilization of community resources, improving utilization of existing resources, and improving the operational efficiency of the school system.

The cost of the educational targets envisaged in the *Asian Model* was calculated with the purpose of providing a certain frame of reference for testing economic feasibility. By 1980, assuming a GNP annual growth rate of 6 per cent, educational cost will account for 4.5 per cent of GNP, which appears to be feasible but nevertheless implies very rapid growth of educational expenditure.

Substantial saving in educational cost will stem from an early reduction in fertility. The point is admirably illustrated in various country studies undertaken by Gavin Jones in association with others. Some of these studies have been summarized in the background document prepared for this seminar by Robert Retherford (See p. 23 ff.).

The study for Sri Lanka (Ceylon) shows that, at present, expenditure is as high as 4.7 per cent of the GNP. This suggests that it will not be easy in the future for Sri Lanka to raise the percentage of GNP spent on education.

A decline in fertility will enable the Government to maintain the educational *status quo* during the next 30 years by devoting a smaller share of GNP than at present. But even a steady decline in fertility will not avert the need to devote to education an increasing proportion of GNP, if quality of education is to be improved. In this case of improving quality, during the entire projection period, savings in educational costs due to an earlier rather than a later decline in fertility will be 22 times the entire expenditure on education in 1969.

The study for Pakistan concludes that expenditure on primary and secondary education would have to be raised from 1.0 to 8.65 per cent of GNP in the period 1960 to 1990 if fertility remains high, and from 1.0 to 6.90 per cent of GNP if fertility declines fast. Therefore the demographic factor alone will account for a difference in expenditure of nearly 2 percentage points of GNP. The importance of this saving is better realized when allowance is made for an extra expenditure of 1 to 2 per cent of GNP required for higher education.

The study for Thailand assumes a fertility decline in 30 years of one-quarter in the high projection, and of one-half for the low projection. In the example of increasing enrolment ratios, savings in educational costs over the entire projection period would be 20 times the total expenditure on education in 1970.

In conclusion, the importance of these savings in educational costs lies in their possible alternative *USE*. One example would be to use these resources to reduce the gross disparity existing between education in urban and rural areas.

11. POPULATION CHANGE AND DEVELOPMENTS IN MANPOWER, THE LABOUR FORCE, EMPLOYMENT AND INCOME*

Introduction

Manpower problems will be the most important point of discussion for developing countries during the coming decades.

The population explosion that has taken place during the past decades has resulted in the "labour force explosion" that will continue for some time to come. Large numbers of young prospective workers will flow into the labour market and will be unable to find satisfactory job opportunities unless appropriate economic development policies and effective employment policies are adopted. Problems of unemployment and underemployment are likely to become very grave. In particular, open unemployment in urban areas among educated people not only means waste of human resources but also results in serious social problems.

Therefore this labour force explosion poses a very difficult problem for developing countries. Too much emphasis, however, should not be given to the difficulties. Rather, recognition of the significance of manpower as a productive factor and concentration of more effort on finding an effective way to use this abundant manpower should receive emphasis. Manpower is a valuable, and sometimes the unique, economic resource that developing countries can use. Too little attention to the importance of human resources and too much attention to physical capital has been one of the mistakes made in discussions of development policies for developing countries.

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Much, sometimes too much, has already been said about the difficult employment situation that faces developing countries today, and will in the future. Therefore, here the emphasis is placed on discussion of policies, particularly industrial policies, that are likely to be of help to developing countries in solving employment and income problems and to contribute to economic and social development.

Supply and Demand Gap for Labour

According to one of the most reliable estimates of the labour force,[1] the rate of increase of the labour force in developing countries of Asia is already very high and will accelerate during the 1970s, reaching more than 2 per cent per annum, in some countries more than 3 per cent. In reality, however, the pressure of the labour supply will be greater than these estimates indicate because there is a fairly large number of potential workers who gave up looking for jobs despite their willingness to work and thus have not been counted in labour force statistics.

Very rapid growth of the national economy is needed to provide job opportunities for this increasing labour force. Supposing that the rate of growth of the labour force is 2.5 per cent per annum, the income-employment growth coefficient would be 3, as calculated by Oshima, and a 7.5 per cent growth of national income would be needed to absorb the incremental labour force[2]. If the rate of growth of the labour force is 3 per cent, the necessary rate of economic growth would have to be as high as 9 per cent. Even such a high growth rate is not sufficient, to provide more and better jobs for those who are presently unemployed and underemployed.

While a few countries in Asian developing areas have already attained a fairly high rate of economic growth, most are facing difficulties in attaining sufficient economic growth. This means that a large gap between supply and demand for labour can be anticipated unless appropriate development policies that meet the special conditions of developing economies at this stage are adopted. In this context, particular emphasis should be put on appropriate development policies, because economic growth policy, if it is not appropriate, does not necessarily contribute to the absorption of the labour force. For example, an attempt to promote economic growth by introducing capital-intensive industries exclusively would result in pushing the value of the income-employment growth coefficient up and probably cancel out the labour-absorbing effect of economic growth.

In addition, the quality of the labour force is indispensable to defining appropriate development policies. One of the characteristics of the labour force in developing countries is the severe shortage of skilled and semi-skilled workers needed in modern factories. But education and training programmes should be part of a general development programme. Thus any hasty industrialization policy requiring many skilled and semi-skilled workers will rapidly encounter difficulties.

Economic Development and Industrial Structure

Every national economy has a specific industrial structure corresponding to its stage of development. Naturally, the higher the stage of development, the more complex its industrial structure. The aim of economic development policies is to push a national economy from its current level to a higher one by creating some new key industries.

Which industry or industries should be chosen as the new key industries depends upon the circumstances of a particular national economy; not only its resources but also its international relations.

The most important criterion of Asian developing countries in their choice of industry should be concentration on industries most likely to make effective use of available manpower. This does not necessarily mean however that the directly labour-intensive industries, such as small-size manufacturing, should be chosen as the key industries. Agriculture and small-size manufacturing are labour-intensive by nature and so are directly labour-absorbing. A more important consideration, however, is the labour-absorbing effect on the national economy as a whole rather than the partial effect in particular industries. Much attention thus should be given to complementary relations of employment opportunities among industries.

In other words, at the early stage of economic development, construction of a "well-organized dual structure" of the national economy is recommended as a target of industrial development. In a well-organized dual structure, the leading industries grow steadily, on a sound basis, absorbing labour from the traditional sectors and providing a market for them by generating income. The new industrial sector would supply products, producer and consumer goods, to the traditional sector. The traditional sector would play the role of supplier of manpower and raw materials to the new industrial sector and also the very important role of supplier of food and other primary products. When this kind of complementary relation between the leading industries and the traditional is well established and continues to operate as the national economy develops further, it can be classified as a well-organized dual structure.

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[1] Ypsilantis, J.N., *World and Regional Estimates and Projections of Labour Force* (Geneva, ILO, 1966).

[2] Oshima, Harry T., "Growth and unemployment in post-war Asia", in *The Structure and Development in Asian Economies* (Tokyo, Japan Economic Research Center, 1968), p. 232. The income-employment growth coefficient as defined by Oshima is a ratio of growth of real national income to that of employment.

However, the dual structure that often appears is different. There exists a modern sector where highly developed, often imported technology and capital-intensive methods of production are used and well-trained technicians and skilled workers are hired at high salaries and wages, on the one hand; and, on the other hand, a traditional sector where primitive technology and labour-intensive methods of production are used and productivity and wages are naturally very low. A very important characteristic of this dual structure is that these two sectors are separated from each other and few complementary interrelations are found. The modern sector produces goods that have difficulty finding sufficient demand in the domestic market and are mainly oriented to export. Workers in the modern sector obtain relatively high salaries and wages, and their consumption expenditure is directed towards goods that do not necessarily correspond to the level of development of the national economy. The traditional sector suffers from a poor domestic market for its product and labour force; productivity and income are low and there is much unemployment and underemployment. There results a biased distribution of income with a wide difference in the income level between the two sectors.

Some Remarks on Policy Measures

Particularly important in the formation of economic development policies in Asian developing countries today is consideration that:

First of all, there is some time lag, normally 10 to 15 years, in the effect of the population factor, especially changes in fertility, on the volume of labour, and thus no population control policy would be effective in solving employment problems in the near future. However, population control policies should not be neglected because control would contribute to a decrease in the population under 15 years of age and help reallocate valuable resources to improving the quality of the labour force (nutrition, education and so on) and the efficiency of the labour force (better equipment). Needless to say, population policies will help ease future employment problems.

Secondly, the traditional sector should be given appropriate attention as it is a vital part of the well-organized dual structure and should be developed soundly. This development should be labour-intensive rather than capital-intensive in the Asian countries of today. This consideration is particularly important because the man/land ratio is very high and an increase in productivity of land by the utilization of more labour is best under the circumstances prevailing in Asian countries today.

Thirdly, adequate selection of leading industries to be implanted or encouraged is the most important decision for policy-makers. Naturally, it depends upon the circumstances of the country under consideration. To facilitate the construction of a well-organized dual structure with complementary relationships between the leading industries and the traditional industries, light industries that produce basic consumer goods and/or producer goods for agriculture and for light industry should be chosen at this early stage.

Fourthly, developing countries should not necessarily import machines and technology devised for conditions in developed countries. They should try to develop suitable machines and technology by themselves or import equipment designed specially for their type of country. In this connection, an effort should be made by the developed countries to develop equipment suitable for developing countries.

Fifthly, it would be commendable if developed countries could regulate their exports and imports in such a way as to encourage the infant industries of developing countries. Many developed countries have reasons to protect their own industries, especially declining ones, but, in consideration of the acute problems of developing countries, developed countries should give way.

Sixthly, some measures should be taken in developing countries against the "demonstration effect". This is particularly important as it leads to an increase in unnecessary consumption and often to wasteful spending of valuable foreign exchange. It also enlarges differences in the standard of living between the rich and the poor, and can create harmful situations.

Lastly, judging from the fact that too much migration from rural to urban areas is causing difficult employment and social problems in urban areas, special measures should be taken to mitigate this migration, for example by promotion of development programmes in rural areas.

12. POPULATION CHANGE AND DEVELOPMENTS IN MANPOWER, THE LABOUR FORCE, EMPLOYMENT AND INCOME*

Previous investigations have demonstrated that past and anticipated changes in the size and composition of the labour force, especially in developing areas, are primarily the result of changes in the size and composition of the total population.[1] Moreover, earlier studies have shown that a decrease in a nation's birth and population growth rates would make it less difficult to increase the proportion of the labour force employed in the industrial or modern sector of the economy and, for about one generation, would operate to decrease the ratio of persons of dependent age to persons of working age.[2]

Previous research has also indicated that the labour force approach to the measurement of the working population and its utilization in less developed areas is seriously faulted.[3] Especially is the labour force or "modern" approach flawed in its inability to measure underemployment, both visible and invisible, and therefore the link between labour under-utilization and poverty. It is, therefore, the purpose of this paper to set forth. proposals for obtaining more useful measurements of the working force and its utilization in less developed countries than are now available. This can be accomplished, first, by more effective use of the present labour force approach, and, second, by the introduction of an alternative to the labour force approach in developing regions.

MORE EFFECTIVE USE OF LABOUR FORCE APPROACH

The widespread use of the labour force approach for the measurement of the work force and its utilization in less developed as well as more developed nations makes it desirable to examine the extent to which it may be employed more effectively for the measurement of underemployment and the link between under-utilization of labour and poverty. The procedures for accomplishing this were developed by the writer at a meeting of experts convened by the ILO at Geneva.[4] In brief, what is involved is the combination of the labour force survey with an abridged income survey and a scheme of cross-tabulations with special emphasis on household tabulations. The preliminary schedule and tabulation outline developed is appended as annex I.

Without elaboration the proposal would make possible :

1. The measurement of unemployment as now achieved through the labour force approach;
2. The measurement of "part-time unemployment" as now achieved, for example, in the United States Labour Force Survey;
3. The measurement of underemployment as:
    a. underemployment by inadequate time input (item 2 above);
    b. underemployment by inadequate productivity or income [as obtained by cross-tabulation of employed and income (both current and longitudinal income as measured by indexes of wealth)];
    c. underemployment by use of lower than highest skill (as obtained by comparison of present with highest occupation possible from education or training or highest occupation);
4. A classification of persons in the labour force by:
    a. "adequately" utilized labour (fully employed with adequate income);
    b. marginally utilized labour (fully employed with marginal income);
    c. under-utilized labour :
        i. unemployed
        ii. part-time unemployed (part-time employed wanting more work)
        iii. fully employed with inadequate income
        iv. fully employed with occupation below highest for which educated or trained.

The above information would be made available for agricultural and non-agricultural sectors, urban and rural population and as far as possible (depending on size of sample) by region. Various cross-tabulations would also be possible by age, sex, ethnicity, race or religion (as may be needed and desirable), marital status, and relationship to head of household.

Of even greater significance for policy designed to deal with labour under-utilization and poverty would be tabulations using the household as the unit of tabulation. Among the information that could be shown would be households by various combinations of the utilization of its workers. For example, households would be shown classified by :

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[1] For example *Labour Force Projections* (Geneva: ILO, 1971), especially part V and also I.

[2] Coale, A., "Population and economic development", in *The Population Dilemma* (Englewood Cliffs, N. J.: Prentice-Hall, 1969) pp. 64-67, 85.

[3] For example, Myrdal, G., *Asian Drama*, vol. 2 (New York: Pantheon, 1968), pp. 994 ff; Turnham, D., *The Employment Problem in Less Developed Countries : A Review of the Evidence* (Paris: Development Centre of the Organization for Economic Cooperation and Development, 1971).

[4] Meeting of Consultants on the Concepts of Measurement of Under-utilization of Labour in Developing Countries, Geneva, November 1971.

1. All workers adequately utilized;
2. All workers under-utilized;
3. Mixed by various combinations of above.

As for tabulations for persons, the data would be made available for agricultural and non-agricultural households (all workers in agriculture, all in non-agriculture, mixed); urban-rural residence; and region (as far as was feasible). Moreover, such tabulations could be shown by household composition and characteristics. The household tabulations would, of course, require coding operations to make the proposed tabulations possible. Needless to say, the cutting points for the definition of "adequate", "marginal" and "poverty" levels of income and similar categories such as "part-time unemployed" and "occupation below that of highest skill" would be determined on the basis of detailed tabulations that could produce definitions consistent with the varying cultural and economic conditions in the countries involved.

Although it is not feasible to present futher detail in this paper to explicate the above proposal, it should be clear that even the present labour force approach with relatively little supplementation and more intensive tabulation could present more useful information on under-utilized labour and its linkage to poverty for policy purposes than is now being obtained.

AN ALTERNATIVE APPROACH TO THE MEASUREMENT OF THE WORK FORCE

In response to the increased recognition of the inadequacies of the labour force approach for the measurement of the work force and its utilization in developing areas, an alternative approach has been proposed and is now being tested in the field. This new approach is the product of a workshop of the Organization of Demographic Associates consisting of population centres and their affiliates in southeast Asia.[5]

In essence, the proposed new approach in an effort to capture "reality" as discussed by Myrdal,[6] is based on the conjoint use of three axes that serve for the differentiation of the population; namely, whether the person is :

1. In the monetary or non-monetary sector ;
2. Working inside or outside the household;
3. In the agricultural or non-agricultural sector.

Under this approach the population above a specified age (say 10 years and over) would be classfied into four major categories :

I. Work for wages or profit.
II. Work outside the household without monetary payment.
III. Work inside the household (or an institution such as a monastery) without monetary payment.
IV. Other (residual category).

I. Work for Wages or Profit

Category I comprises those who work for wages or profit and includes essentially the workers in the monetary sector of the economy or the modern sector of the work force in the country. Compared with the work force in economically advanced countries, such persons constitute a relatively small proportion of the total. This is the sector that the labour force approach does identify well because the labour force approach was developed to measure the work force in an economically advanced nation.

For analytical purposes, and because of its policy implications, it is proposed that these workers in the modern sector be further subdivided :

A. Work for wages;
B. Work for profit, own-account workers.

In effect, these two groups parallel employees and own-account workers as reported in the class of work categories in the labour force approach, but, within each of these groups, further differentiation not normally obtained in the labour force approach is proposed. In the category, "A. work for wages", these differentiations are suggested:

1. Only one employer;
2. More than one employer;
3. Commission workers;
4. Casual workers.

These subcategories would provide information not now available on the network of employee-employer relations in the monetary sector.

Similarly, within the category "B. work for profit-own-account workers", these differentiations are proposed :

1. With paid employees only;
2. With unpaid family workers;
3. With both paid and unpaid workers;
4. With no paid or unpaid workers;
5. Contractor for workers;
6. Rentiers (living on investments).

It was realized that these differentiations call for more detail than may be feasible in continuous surveys or even a decennial census, but it was felt that, for experimental purposes, an effort should be made to distinguish these various groups of workers with the possibility that consolidations could be effected depending on the actual distributions ascertained.

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[5] Hauser, Philip M., "A new approach to the measurement of the work force in developing areas", *Malayan Economic Review*, (in press) also in *Festschrift* (honouring Eli Ginzberg) and Columbia University Conservation of Human Resources Project, "Human resources and human welfare" (in press).

[6] *Op. cit.*

II. Work Outside the Household Without Monetary Payment

The second major functional classification of worker includes persons employed in the non-monetary sector of the economy but outside their own households. This would include workers who do not receive monetary payment and who, it is proposed, at least at the onset, be further subdivided into these categories :

A. Payment in kind;

B. Without any payment (exchange labour or not exchange labour);

C. Nomadics—hunters, fishermen, etc.

Persons in category "A. payment in kind", it is proposed, would be further subdivided into :

1. Unpaid servants;
2. Sharecroppers;
3. Apprentices and trainees;
4. Others—job squatters, etc.

Thus, category II along with category I would, in effect, account for all persons engaged in work outside the household (or institution) in which they resided. These persons, in most developing areas, would account for a relatively small proportion of the total work force.

III. Work Inside the Household (or an Institution) only Without Monetary Payment

This category will probably include most of the work activity in the developing nations. In the agricultural sector, which is the major sector of the economy, and in much of the non-agricultural sector, work activity is essentially a family enterprise and is performed inside the household (or in an institution such as those of religious orders) without monetary payment. It is proposed that this category be subdivided into four groupings :

A. Unpaid family members working on farm or family enterprise (whether or not performing household duties or attending school);

B. Unpaid family members working in putting out system (whether or not performing household duties or attending school);

C. Both types of work included in A and B;

D. Household duties only.

Here again, it is proposed that an effort be made experimentally to obtain the detail indicated so that consolidations can later be effected on the basis of empirical distributions.

IV. Other (Residual Category)

The remainder of the population 10 years of age and over, it is proposed would be subdivided into these residual groupings :

A. School only;

B. Disabled;

C. Retired and pensioners;

D. Inmates of institutions (other than those included above);

E. Other.

In effect, this category of persons would be persons not in the work force. Moreover, the subgroupings would all be residual groupings of those persons of similar status who were not included in categories I, II or III. For example, persons in school in category IV would include only those students who did not fit into any of the other groupings and would, therefore, not include all persons in school.

The detailed listing of functional categories thus obtained is appended as annex II.

The tabulations to be derived from this new approach would begin with the simultaneous groupings of the work force into those :

1. In the monetary or non-monetary sector;
2. Working inside or outside the household;
3. In the agricultural or non-agricultural sector.

For these primary groupings, then, the types of tabulations proposed above for the labour force approach could then be run. The advantage of the new approach for policy determinations would lie in the differentiation of the work force on the three axes noted, which, in effect, would more accurately differentiate the work force into the modern and traditional sectors. One could classify all workers (or households with all workers) as under-utilized if in the traditional sector (non-monetary, work outside the household, work in agriculture) or use a cutting point based on income to define part of the work force in the traditional sector as "fully employed with adequate income". It would probably be found that most of the usual information obtained through the labour force approach is applicable only to the modern sector (monetary income, non-agriculture, outside the household).

It may be, therefore, that the tabulations proposed above for use with the labour force approach are desired only for the work force in the modern sector. If so, the major tabulations for workers in the traditional sector may turn out to be tabulations by sex, age, marital status, relationship to head of household, education and training, and some measure of current income and wealth. Such tabulations for the traditional sector could, in combination with the tabulations for the modern sector, still enable the analyst to classify both persons and households into those with "adequate", "marginal" and "poverty" levels of income in relation to labour utilization. In any case, the new approach would provide both the analyst and the policy-maker with new dimensions and new options for analytical and policy consideration.

CONCLUDING OBSERVATIONS

Obviously the new proposals made both for the most effective utilization of the labour force approach and the alternative approach leave many questions unanswered. Among these questions are those relating to survey frequency, size of sample, finalized schedules and manuals for enumerators, time references, income and wealth questions, and specific cutting points for the significant groupings suggested. Although these types of questions are not dealt with in this paper, the writer has explored the possibilities sufficiently to be confident that adequate answers are possible and that the proposals are at least ready for experimental use in the field and in tabulations. Certainly the time has come to press for better information about the work force in developing areas for analytical, policy and programmatic purposes. The new proposals point to possible next steps in this direction.

ANNEX I

SURVEY FOR ANALYSIS OF UNDER-UTILIZED LABOUR AND POVERTY

(using conventional Labour Force Approach with limited supplementation)

Ethnicity or race of head ....
Religion of head ....

Household Survey

Face sheet items :
Geographic : Village, town, country, state
☐ rural ☐ urban

If rural : ☐ on farm or any farming
If farming : acreage land owned ....
acreage land rented ....

Value of house ....
Housing: tenure: ☐ owned ☐ rented
rent paid ....

type: ☐ single house ☐ row house ☐ flat ☐ other;
construction:
☐ hut—local materials
☐ wood
☐ masonry
amenities: water
☐ running water inside house
☐ tap outside house
☐ well
☐ other
plumbing
☐ flush toilet
☐ pit latrine
☐ surface
Rooms: number rooms ....
,, ,, bedrooms ....

Employment : No. part-time employed ....
No. part-time unemployed ....
No. full-time unemployed ....

Family income : from wages or salary in kind ....

Total family income : from land ....
other (specify) ....

Economic Status	**Occupations**
☐ poor	☐ all occupations non-agricultural
☐ low income	☐ all occupations agricultural
☐ adequate income	☐ occupations mixed No. occupations own account .... No. occupations employee government ... private .... No. occupations employer .... No. occupations unpaid family ....

Questions for Individual Members

List each person in household and for each person show:
Relationship to head of household;
Age, sex, marital status, school attendance, highest grade of school completed.

Codes : No. persons in household ....
No. children in household ....
No. workers in household ....
No. full-time employed ....

For persons 10 years old and older:

Principal activity during time period :

☐ working or have a job
☐ seeking work
☐ housewife only
☐ student only
☐ other—specify........

If not working or with job or seeking work did person in addition do some work?

☐ Yes ☐ No

For all persons with some work or job :

Indicate occupation; industry; status; hours worked (during time reference period).

Did person want more work ? ☐ Yes ☐ No

For persons seeking work: when did seeking begin? ....
(code duration of unemployment)

For persons neither working, nor with job, nor seeking:

☐ housewife
☐ student
☐ retired
☐ unable to work
☐ other-specify

	last week or month	last year
Income: from wages or salary		
*money value of income in kind	....	....
money income from agriculture	....	....
*money value of products consumed	....	....
other money income-specify source	....	....

(*can be imputed from standard instructions)

Total money income	....
Value other income	....
Total income	....

TABULATIONS FOR PERSONAL DATA:

Controls: Geographic - urban-rural
city-size
regional

Minority group (race, ethnicity or religion)

1. Population by sex, age, marital status, relationship.
2. Labour force (employed plus unemployed) by age, sex, relationship, marital status.
3. Labour force participation rates (from 1 to 2).
4. Employed by age, sex, relationship, marital status.
5. Unemployed by age, sex, relationship, marital status.
6. Labour force by utilization by age, sex, etc.
   (a) Employed—full hours
   (b) Employed—part-time
      (i) want more work
      (ii) do not want more work
   (c) Unemployed
   (define b (i) + c as under-utilized by time input)
7. Labour force by age, sex, etc.; by occupation, industry, status. (Condense into broad categories).
8. Employed as in 7.
9. Unemployed as in 7.
10. Under-utilized as in 7. (As defined in 6).
11. Employed by age, sex, etc.; occupation, industry, status, condensed groups by income—last month and last year. (By categories of income).
12. Unemployed by age, sex, etc., occupation and status groups by income—last month, last year (By categories of income).
13. Under-utilized by age, sex, etc.; occupation, industry, status group by income—last month, last year. (By categories of income). (Define as poor the low elements in 11, 12 and 13).
14. Under-utilized (as in 6) and poor (as in 13) by age, sex, etc.
15. + Introduce education as variable into above.
   (a) Introduce agricultural occupation, non-agricultural occupations as controls and redo above.
   (b) Try also as controls:
      (i) Non-agricultural income only (or by categories of income).
      (ii) Agricultural income only.
      (iii) Mixed agriculture and non-agriculture.
   (c) Try also as controls:
      (i) Employees (government, private).
      (ii) Own-account.
      (iii) Unpaid.

TABULATIONS FOR HOUSEHOLDS :

Controls: 1. Geographic—as above.
2. (a) All members in agriculture.
   (b) All members in non-agriculture.
   (c) Mixed.
3. Number of workers
   One worker only.
   Two workers only.
   Three or more workers.

1. Households by number of persons, number of children, by age and sex of head.
2. Households by number of members employed,
   number of members unemployed,
   number of members under-utilized,
   Analyse households into:
   (i) all members under-utilized,
   (ii) all members fully employed,
   (iii) mixed.

3. Households by family income by source, analyse into:
   - (a) (i) all income from non-agriculture,
     - (ii) all income from agriculture,
     - (iii) mixed;

   Analyse each of above into:
   - (b) (i) poor,
     - (ii) low income,
     - (iii) adequate income.
4. Cross-classify by (a) and (b) in 3.
5. Households by housing type, construction materials, water supply, number of rooms and plumbing. Analyse into:
   - (c) (i) adequate housing,
     - (ii) inadequate housing,
     - (iii) substandard housing.
6. Households by value and rent.
7. Cross-tabulate 5 and 6 to improve classification (c).
8. Cross-tabulate (c) and (b) (from 3) to check definition of poverty.
9. Can then analyse households into
   - (i) all under-utilized labor .... poor
     - not poor
   - (ii) all full-employed .... poor
     - not poor
   - (iii) mixed .... poor
     - not poor

Other possibilities :

1. Households by income *per capita* (using adult equivalents for children) and use as basis for poverty classification in above.

ANNEX II

SUMMARY OF THE FUNCTIONAL CATEGORIES

In summary, then, the proposed functional classification for workers in developing countries is as follows:

I. Work for wages or profit

- A. Work for wages
  - 1. Only one employer
  - 2. More than one employer
  - 3. Commissioned workers
  - 4. Casual workers
- B. Work for profit : Own account workers
  - 1. With paid employees only
  - 2. With unpaid family workers
  - 3. With both paid and unpaid workers
  - 4. With no paid or unpaid workers
  - 5. Contractor for workers
  - 6. Rentiers—living on investments

II. Work outside household without monetary payment

- A. For payment in kind
  - 1. Unpaid servants
  - 2. Sharecroppers
  - 3. Apprentices and trainees
  - 4. Others—job squatters, etc.
- B. Without any payment (exchange labor or not exchange labor)
- C. Nomadics—hunters, fishermen, etc.

III. Work inside household (or institution) only, without monetary payment

- A. Unpaid family members working on farm or in family enterprise (whether or not performing household duties or attending school)
- B. Unpaid family members working in putting-out system (whether or not performing household duties or attending school)
- C. Both types of work included in A and B
- D. Household duties only

IV. Other (residual category)

- A. School only
- B. Disabled
- C. Retired and pensioners
- D. Inmates of institutions
- E. Other

13. FAMILY PLANNING COMMUNICATION IN SOCIAL DEVELOPMENT*

Social development is essentially a product of expanded applied communications. The widening of the social texture and the establishment of the infrastructural organization that makes economic development possible is in itself a process of dynamic, creative communications.

The communications system of a given country is directly related to its rate of social development. It is true, that economic development has a direct bearing on the communications system; but a developed communications system by itself, as a mere result of economic development, is not necessarily a powerful instrument of public service and education nor consequently a generator of positive social development. To achieve this, the proper use must be made of the media, in the public interest and in accordance with national developmental policies.

Developing Asia has not made the best use of communications systems and media for the purposes of social development. The failures of economic development can be at least partly attributed to failures in communication. There has generally been, in developing Asian countries, no concerted strategy of communications intended not only as support but as the very lifeline of national development.

UNESCO Action

UNESCO action to support communications programmes related to family planning and population activities is based upon the conviction that communication holds the key to development. Accordingly, UNESCO seeks:

1. to improve the availability and handling of communications channels, media and techniques in all fields relevant to human development, including family planning; and
2. to encourage the capacity of member countries to apply such work and appreciate its potential.

It is believed that this will not be possible unless development of a communications policy is considered as a vital element in the developmental strategy. UNESCO support for family planning communications programmes is thus foreseen as part of the over-all effort at development of a national communications policy based upon research and field experience.

A communications policy, particularly with regard to family planning, has to take cognizance of the communications process as a continuum in which media, messages and audiences become interdependent. UNESCO thus aims not merely at providing assistance in the development of the media infrastructure but also "know-how" on media and methods of communication, taking into account the society as a whole and its particular groupings.

Family Planning Communications

Family planning communications, seen as an integral part of development communications, must be much broader than pure information and certainly more substantive than publicity. They must be based on a continuing study of audiences and their responses, as well as sources, channels, passages and techniques. Deciding on communications matters necessarily presupposes a study of society. Research, planning, designing, pre-testing, evaluation and feed-back analysis are indispensable in tailoring a communications programme to the characteristics, circumstances and requirements of specific audiences. Communications strategy and media structures are therefore the result of continuing study and experimentation.

At all levels of development (personal, family and community) action is motivated and oriented by a total flow of communication in which all factors and impulses combine. The messages most acceptable to an individual are likely to be those holding out the higher chance of his playing the role he sees for himself in society. At the community and national levels, the roles are set by plans and programmes of various agencies, ultimately the Government. Plans and programmes contain a powerful communication component. They need to include, as an integral part of both their objectives and activities, a communication strategy deeply embedded in the development process they aim at promoting.

In family planning, as a conscious effort at intimate behavioural change, UNESCO concern is not merely with the media and their use but also in the setting up of the vital feed-back mechanisms that would make the media a real instrument of change in personal and community behaviour, attitudes, and thinking. UNESCO assistance for family planning communications programmes thus seeks to cover not merely the informational aspects but the total communications task that is to ensure that the information disseminated leads to action for adoption through community organization and face-to-face work. UNESCO seeks to foster communications structures and organizations that should make such a process a living reality.

Not merely has there to be an integrated communications approach at all levels of activity from planning to execution and evaluation but also in terms of messages, because family planning messages in isolation cannot have meaning without being an integral part of appeals directed towards attainment by the people of their personal aspirations and community goals. Thus, while UNESCO recognizes that, in the face of a problem so gigantic as that of population growth, communications programmes directly related to it have to be started; yet, after the initial phase, integration with communications programmes for economic and social development has to take place because, over a long period of time, family planning messages *per se* would either have to compete against other messages or become part of them.

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*By UNESCO.

New Look in Southeast Asia Region

More and more countries and organizations in the southeast Asian region are progressively widening their outlook of sectoral communications and viewing each individual communications programme as an input into the over-all process of social development. This has sometimes been called the cross-sectoral or interdisciplinary approach. It has been largely subscribed to by the participants of the Inter-country Workshop on Development of Health Education Media with particular reference to family health, which WHO held in Delhi in October 1971.

International agencies, Governments and non-governmental organizations are moving towards closer co-ordination in their efforts at implementing social development.

A few examples of how some countries in the southeast Asia region are treating family planning communication as a basic element of their socio-economic development are given below.

New Indian strategy

Having perhaps the longest and most extensive experience in family planning, India has felt, in recent years, that its efforts had reached a level that only an imaginative and all-pervasive communications strategy would be capable of crossing to seek new ascents. The new motivational approach (aimed at bridging the continuing large gap between awareness and practice) moves away from presenting the need for family planning merely in terms of the population explosion to an attempt to show to the people in what way family planning helps the individual by relating it to the requirements of health, education of children, better nutrition, better home life, better care of women and the like.

Indonesia and Thailand

Indonesia is tackling the complex problem of motivating its diverse and scattered communities towards family planning acceptance and adoption through an interesting approach. It had devised a project for the establishment within the National Family Planning Co-ordinating Board (BKKBN) of a Resource Office of Communication Development intended to supply guidance, expertise and material assistance to all agencies involved in family planning and population programmes for the development of their own communication strategies, techniques and materials. The Resource Office would promote, co-ordinate, analyse and whenever necessary undertake research, planning, design, experimentation, pre-testing and evaluation with a view to developing existing and innovative approaches and materials.

Provision has been made in the Indonesian project for achieving the widest possible integration of family planning communication with the communications programmes of all other sectors of national development. In fact, the new office of BKKBN is seen as a possible model for the creation of similar units in other fields of national activity. A desired goal is the establishment of a National Institute of Communication Development, ideally linked to a National Development Guidance Directorate in the Ministry of Information, to serve the whole field of social and economic development in the country. UNESCO's role in the planning of the Indonesian project is typical of the thinking that has been applied to UNESCO'S programme of assistance to family planning communications in the Asian region.

A similar project has been finalized in Thailand, which is also to have a Resource Unit of Communication Development within the National Family Planning Project.

Philippines

In the Philippines, the acceptance of family planning communication has been heavily on research, development and training. The UNESCO project with the Institute of Mass Communication, University of Philippines, has recently started. The basic thinking behind the project is that research cannot be treated in isolation or be an isolated entity but has to be the very base for policy formulation and decision-making.

The Institute of Mass Communication at Quezon City has also taken up another of UNESCO's proposals in the region, namely an experimental field workshop in integrated family planning communication. It would be an action-oriented experiment in the integration of family planning communication in the mainstream of developmental communications and would aim at training teams of extension workers from different development agencies that are potential channels for the family planning message.

Iran

The Iranian family planning programme is being evolved on the basis of the experimental approach. Not only is communication an important built-in component of the programme, it is also conceived of as a vital element in the services delivery system. In terms of their communications components, the experimental projects in Isfahan and Kuzistan are visualized as significant to economic and social development. Based upon the experience gained from these two projects, Iran proposes to include a comprehensive family planning programme as part of the next five year development plan beginning in 1973.

UNESCO Plans

The proliferation of the family planning communications assistance efforts, although not always in the context of development, is a matter of concern to Unesco. It is true that there is room enough for all agencies at all levels to provide such assistance, but it may at least be done in a co-ordinated fashion, so that, in such crucial areas as research, training and evaluation, there is the least overlap and optimum use is made of the available resources. Here, there is probably need for development of a mechanism for co-ordinated action. UNESCO is in a position to promote such an effort. Along with the International Planned Parenthood Federation, for example, the first steps have already been taken for the establishment of an international clearing house system for communications materials in support of family planning and population activities. Similar action with other agencies in fields of their interest can indeed be taken.

In the very near future, the first experiment with direct broadcast from a satellite will be launched. Evidently there is great scope for development of software for such a project. Undoubtedly, UNESCO, together with other interested international organizations, could do useful work developing family planning programmes for satellite broadcasts. This is an area which needs much collaboration and co-ordination, that UNESCO could be in a position to ensure.

UNESCO's plans for family planning communication projects fit in the over-all picture of use of communications and research for economic and social policy, on the one hand, and for serving as a means for development, on the other. Some of the family planning communications activities that are proposed for the achievement of these goals are:

1. Strengthening of UNESCO regional offices with family planning communications and population education experts to help assist Governments to develop projects;
2. Assisting country programmes, upon request, with expert/consultant support and equipment supply;
3. Strengthening of institutes of mass communication or other interested organizations for taking up family planning communications research;
4. Taking concerted action to improve the capability of countries in family planning communication by providing training for their personnel and by organizing a trained corps of personnel capable of undertaking international assignments in the field on behalf of UNESCO;
5. Backstopping the field activities at the country and regional levels through meetings of experts; and
6. Holding seminars and conferences of experts to indicate pertinent field problems needing investigation.

UNESCO's overall strategy of helping the emergence of communications polices as a prerequisite to development envisages the activities of communications centres (research, resource and training centres) in various regions. These centres would undoubtedly be of great help to the family planning communications programmes as they are likely to have the resources and the "know-how" to deal with the manifold problems of family planning.

14. POPULATION CHANGE AND TRANSPORT AND COMMUNICATIONS DEVELOPMENT*

There is both a direct and indirect relationship between population size and transport requirements. A society of collectors, hunters and subsistence farmers living in self-contained units scattered over a large area has no need for a transport system. But population growth leads eventually to the point where the available land cannot support this pattern. More efficient utilization of resources becomes necessary, giving rise to a more complex organization of the society. Specialization of jobs and exchange of commodities implies physical transfer over distances. The need for a transport system is created. Continuing population growth, which adds new complexities to the society, increases the demand for transport services to an extent that is more than proportionate to the growth rate.

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*By C. Smits, Transport Economist, Asian Highway Transport Technical Bureau.

On the other hand, when transport facilities are available, either natural (e.g. rivers), or man-made (e.g. roads) conditions for specialization and exchange are favourable, and either an increasing population can be supported or the existing population sees an increase in real income. This is one reason why investment in a basic transport network is indispensable for the stimulation of economic development.

The demand for transport is closely connected with the level of economic and social development. Expanding industry, with its diversified markets and scattered supply sources, demands a more complex, diversified transport system, relying on it throughout the stages of production. More people leave their homes to participate in the production process in workshops and offices, increasing demand for passenger facilities. Generally, the demand for transport grows proportionally faster than national product in the early phases of development.

The demand for transport as such generally comes with rising incomes as proportionally more is spent on travel. And reduced travel costs, resulting for example from newly constructed roads, lead to a rapid increase in passenger travel. This propensity to travel, to be mobile, may have an important influence on social interaction and perhaps also on attitudes towards acceptance of social changes.

In the developing countries of the region where a limit of resources in relation to population has apparently been reached, the transport sector will have to develop proportionally faster than population just to maintain existing standards of living by supporting industrialization and specialization and proportionally faster than national product to assist the transition from an agricultural to an industrialized economy.

The development of a transport system affects population changes indirectly as it facilitates administration of social services, such as education and health. Furthermore, the increased possibilities for mobility may affect attitudes towards family size.

Once the transport facilities are created, population and activities will concentrate in areas of optimum access. This has long-run effects as the transport infrastructure will generally last for decades and can only be removed at prohibitive cost. Planning for transport should therefore take into account the long-run objectives of social and economic development.

The transport sector generally consists of different modes of transport each with its own characteristics. In some respects they are complementary the smaller networks feeding the main connexions. In other respects, the modes are competing, and they might be substituted at least over a certain range. Because of differing characteristics, there is a distinction between the parts of the system provided as a public service and those provided by private transport. There is some variation in proportions depending on government policy and on the modes available. In public transport, total costs per unit of transport performance are generally lower, but private transport is often more flexible and convenient.

The problems and scope of transport systems in high-density areas and transport in rural areas are significantly different.

Pattern of Transport Development in Industrial Nations

In the advanced industrial countries, long before the present motorization, inland shipping and rail systems were constructed to permit industrialization, and urban transport systems made large urban concentrations possible. In recent decades, there has been the phenomenon of rapid motorization that has thoroughly affected the economy, social conditions, living patterns and transportation. Typically, the use of the private motor-car has replaced existing transport modes, often disrupting public transport and even threatening its economic viability. Rapid motorization has resulted from the increase of incomes *per capita*, which has brought ownership within the reach of an increasingly larger segment of the population. Increased living standards have also meant a shift in residential patterns to areas with lower densities, which are generally farther away from work. The availability of private motor-cars has triggered many changes in recreation, mobility, etc. An aspect that has become very relevant in recent years is the impact of the automobile on the environment. Complete adaptation of the transport systems, especially in urban areas, to the unrestricted use of private cars has been calculated for some cities, and the costs associated with it seem to be unbearable even for the advanced nations.

The progressive use of private cars has not only adversely influenced public transport systems through a loss of revenue but also through congestion. Congestion also inflicts losses on commercial road transport. A solution of this problem has not yet been found, but attempts to counter this trend have led to an upsurge in construction of rapid transit systems in urban areas.

Pattern of Transport Development in Asian Developing Countries

In the developing countries of Asia, the pattern of transport development has been different. Before the era of motorization, only very basic transport systems had been developed that mainly served the needs of the metropolitan powers. At present, transport networks are being developed rapidly, posing high burdens on the economy and the government budget. As the networks are opening up new areas and some initial over-capacity is built in because of technical requirements, the impact of the rapid population growth on transportation facilities does not surface in the short run. In the long run, however, a high level of investments will be necessary to expand the transport system to meet minimum requirements of access.

The transport system must be developed and improved to sustain the economic development that is planned for improving income and social conditions in a country. The transport system has to be expanded at least proportionately to population growth just to maintain present standards. The transport system has to be adapted to demographic changes such as urbanization and changes in agricultural settlements.

Transport is not the only sector requiring investments aimed at improved social standards and sustained economic development or to provide for population increases. Education, housing, health and other social services require funds; investments must be made for the industrialization and modernization of the production apparatus.

Population increases also increase the demand for investment in all these sectors merely to maintain the same level of social development. This aggravates the scarcity of resources for transport development. Population increases may result in production increases, but certainly at a later stage, and meanwhile the investment in infrastructure has to precede any production increases.

It is obvious that choices have to be made, as, at the present and future levels of *per capita* income in the area, savings can only be very modest. It would also be very unwise to expect international aid for more than a proportion of domestic savings. Total resources available for all these purposes, and particularly for social overhead investments, will thus be very limited.

As far as the transport sector is concerned, this certainly means that the number of private cars must remain very limited and that no investments should be made that encourage their use. The need thus arises for good public transportation facilities, operating at reduced costs if the use of private cars is restricted.

Regarding the engineering standards for the transport system, it might be necessary to sacrifice some quality and to aim for a lower standard than that in force in the more developed countries. Also, it may be a good policy not to modernize parts of the transport system too rapidly when traditional forms of transport on inland waterways or by animal carriage are still functioning satisfactorily.

Emphasis on public transportation, especially in urban areas where the greatest investment needs for all purposes will arise, requires adaptation to planning for housing and employment centres.

Another factor affecting transport planning is the impact it has on the environment. As limited resources will certainly not permit expensive remedial measures, it is necessary from the outset to prevent adverse effects occurring.

Finally, the wisdom of present methods for the evaluation of transportation projects, and also of other public investments, may be questioned.

Transport planning consistent with national economic planning objectives is of course excellent if the national planning is realistic with regard to obtainable goals and available resources. But the analysis of projects, where benefits consist mainly of savings to vehicles, which perhaps should not run on the roads at all, is deceptive. A high rate of return or positive ratio of benefits over costs gives some indication of alternative projects, but does not guarantee that the project will contribute efficiently to long-term social objectives. First of all, it is not known whether other public investments would not have greater benefits, which are not so easily calculated. Secondly, for long-term projects, it seems risky to base calculations on present relations between resources and demand, especially if changes in the present situation are foreseen and planned. Of course, in the evaluations, various refinements are introduced to remedy these deficiencies, but it is always difficult to take many factors into account in the context of one specific project. A systems approach with a clear statement of long-term objectives and an inventory of possible means and resources may be necessary. Such an approach might well be based on projected demographic changes and statements of minimum social requirements instead of on economic returns. Within these limits, then, economic analysis can be useful to allocate resources to alternative projects, neutral in aspects of social development, and to ensure that the scarce resources are managed efficiently.

15. THE INTERRELATIONS OF POPULATION DYNAMICS AND SOCIAL CHANGE*

In 1963, the first Asian Population Conference met in New Delhi. It was a conference of Governments, with a mandate for recommendations. The contributions to the advance of population as a field for policy and planning extended from the countries and the Asian region to the United Nations and the specialized agencies. But the numbers of the people continued to increase at rates that slowed economic and social development and modified the changes in individual and family welfare. The earth's population was 3,200 million in 1963, 3,600 million in 1969. Asia's population was 1,800 million in 1963, 2,000 million in 1969. The Asian countries included 55.4 per cent of the earth's population in 1963, 56.4 per cent in 1969. The Asian percentage of the six-year increase was 63.9.

The increase of population in the years from 1963 to 1969 suggests the complexities of the processes of growth, the intricacies of the associations in development, the depth of the folkways and beliefs sustaining traditional families, and the immensity of the tasks of transformation. It does not demonstrate the immutability of growth. There are swiftly advancing demographic transitions in some Asian countries today. There are bases for transition in others. And there are countries where the acquisition of knowledge and the approaches to policy are just beginning.

The second Asian Population Conference will be held in Tokyo in late 1972. There are deepened responsibilities and major urgencies in the work to be undertaken there. The time for the resolution of the problems of population growth is limited and the task is complex. The separate sessions of this seminar have considered marital status and the family; households and housing; education; manpower; labour force; employment and income; food and nutrition; health; social dependency and social security; transport and communication; and social mobility. The orientation implicit in the title of the seminar, "The population aspects of social development", implied an emphasis on the impact of population on social development rather than a mutuality of associations. The title and hence the task of this aspect of the seminar concerns interrelations in change.

All population changes are interrelated; all social and economic changes are interrelated. Neither this statement nor its elaboration in lengthy tomes would contribute to the selection of those recommendations for research, planning and action that would contribute directly to the resolution of the population problems of Asian lands in the minimum feasible period of time. Theoretically, there should be a dilemma of choice that could be resolved only through assessment, evaluation and priority allocations across a range of possible approaches to population and social interrelations. In fact, the priority question in the population dynamics and the social changes in the Asian region as a whole and among most of its numerous peoples in the near and the far future is demographic transition.

The critical question in demographic transition is the future course of fertility. What social changes now operative or emergent contribute to transitions in marriage, family and fertility? Can stimulated social changes contribute to speedier modernization at earlier stages of economic growth? Can the circularity of the relations between rapid population growth and lowered economic growth be reduced through social changes? If so, what are the changes? Will the economic difficulties of the decades of rapidly increasing manpower and severe difficulties in employment perpetuate the milieu of traditionalism and poverty that sustains high fertility? Or are there intermediate social and psychological responses that could mitigate or divert the lethargic aspects of economic pressures and speed the transitions in marriage, family and fertility from ancient to modern patterns? These and further questions are simple to state, difficult to answer. The greatest gap in population research today lies in the area of social impacts and interrelations. In view of the dimensions of the Asian population growth and the limitations to the time available for resolution, this research, which is so sparse, is the type most needed if there are to be new approaches to the policies and programmes of Governments.

THE POPULATION PERSPECTIVE

The peoples of Asia are diverse in origin, culture and historic experience. Location, climate and resources vary. There are major areas of homogeneity and great areas of diversity. The primitive and the great civilizations have alike evolved in Asia over legendary and recorded times. Periods of economic advances, political consolidations and cultural achievements have been followed by periods of decline, contraction and disintegration. There were interrelations but not uniformities in the developments of peoples, cultures, technologies, economies and political orders among the regions. In recent centuries, the coincidences of Asian disorganizations and European commercial and industrial expansions thrust the levelling impacts of colonialism over all Asia, whether in direct or informal political contexts.

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Sources : The data for countries were secured from various issues of the *Demographic Yearbook* and the *Statistical Yearbook* (United Nations Statistical Office publications). Population projections are the medium estimates of the United Nations given in "World population prospects, 1965-1985, as assessed in 1968" (United Nations, Population Division, working paper No. 30, December 1969). For the projections of labour force and occupational structures: Ypsilantis, J.N., "World and regional estimates and projections of labour force," and Scoville, J.G., "The occupational structure of employment", in *Sectoral Aspects of Projection for the World Economy*, *First Interregional Seminar on Long-term Economic Projections*, *Elsinore*, *Denmark*, 14-25 *August* 1966, vol. III: *Discussion Papers* (United Nations publication, Sales No. : E.69.II.C.3.), pp. 36-76, 77-109. For the projections of the urban and rural populations : *Growth of the World's Urban and Rural Populations*, 1920-2000 (United Nations publication, Sales No. : E.69.XIII.3). Summary tabulations and analyses are presented in the general background paper prepared for this seminar by Robert D. Retherford, "Population aspects of social development".

In the historic Asia prior to the eighteenth or even the early nineteenth century, there were areas and times of population growth, areas and times of population decline. The conditions and means of living and the hazards of death were pre-modern. In the great cultures and among most of the simpler ones, marriage and family, the roles of women and the relations of the generations sustained levels of reproduction high enough to maintain the continuity of people and culture. The early contacts and interactions with colonial peoples were often accompanied by increased mortality. Over the course of the colonial era, though, there were some reductions in death rates along with general continuities in birth rates.

There were areas in Asia that were not colonial. Here, responses were diverse. There was industrialization, urbanization and demographic transition in Japan. There was neither indigenous development nor colonial order in China. There were adaptations in Thailand.

Until three decades ago, there were few acute problems of population growth. There were areas of intensive pressure; occasionally there were years of epidemic, famine or other cataclysm. Theories were available to explain the dynamics of population change. The most prevalent one in its western variant was associated with the name of Robert Malthus. The studies of social scientists and pragmatic demographers indicated that population growth was a long-run rather than an immediate problem. Fertility and mortality were alike tied to the levels of living, the state of nutrition, the health hazards, the social institutions and the family values of the traditional society. Economic, social and demographic modernization, when or as it came, would be a unified process.

The history of the scientific and administrative advances in medicine and health protection need not be repeated here. The associated developments in medicine, health, nutrition, political order and public administration yielded major and generally continuing declines in death rates. Except in Japan, where industrialization was progressing, marriage, the family and fertility remained largely traditional. Rates of population growth increased swiftly. These are widely known and highly publicized facts. They are the statement of the Asian change in its broadest frame. They are not explanations of the pervasiveness or the intensity of the problems of population growth on the continent.

The lands of the low plains and deltas of monsoon Asia were settled densely and cultivated intensively. Traditional economies and societies were efficient in the sense that large populations were sustained on limited land areas. There was early and almost universal marriage among girls. Fertility was high; those differences that characterized social-economic, regional and cultural groups were within the ranges that would be defined as high in any comparative context. The folkways, the life styles and the values that sustained the high fertility were both deep and diffuse. The increasing ages at marriage and the limited child-bearing among the married that would be demographic transition were intermeshed with all aspects of modernization. The social transformations involved the family structures, the relations of the sexes and the generations, the roles of women, the attitudes to change, and the time orientations of aspirations.

The declining mortality and the stable or slowly changing rates of marriage and fertility were mutually re-enforcing in their impacts on the social, economic and demographic structures and dynamics. Since the savings in life were concentrated in infancy and childhood, rapidly increasing cohorts moved upward through youth and adolescence to reach the ages of marriage, family formation and labour force participation. The persistence of early marriage and high rates of child-bearing among the increasing numbers of parents yielded major increases in the new cohorts of infants. The life cycles would be repeated as long as the conditions influencing life and living remained unchanged. But the increasing numbers themselves altered the social, economic and political environment at all levels from the rural villages to the great cities and the national states.

The responses of Governments and peoples to the new milieu of increasing numbers were rapid and widespread. The distinctive aspects of the demographic transitions of the middle and later twentieth century became the difficult problems of plan, programme and achievement. Most of the Governments developed programmes to make information and facilities for family planning available to the people, usually through the health services. Initially, achievements seemed to be limited except in countries where there was already rapid social and economic change, rising ages at marriage and declining fertility. Population growth programmes emerged as integrated components in economic and social development programmes rather than as separable paths to development.

The population dynamics of the Asian peoples and regions that had been convergent in the colonial era became increasingly divergent. Japan has the vital balances, the urbanization and the mobilities of completed transition. The population of China is assumed widely to be in transition, though the data of censuses, surveys and vital records are lacking. There is transition in the Ryukyus and the Republic of Korea. The area of transition extends beyond this core area to Hong Kong, Singapore, Malaysia and Sri Lanka (Ceylon). There are regional and group populations in transition elsewhere in southeast and south central Asia, but incisive nationwide transitions are not yet demonstrable in the larger countries.

The relation between transitions, explicit policies, and programmes is a field for research and evaluation. In some of the countries of present or oncoming transition, there are explicit policies and major operating programmes. In others, explicit policies were either absent or associated only roughly with the course of demographic change. These relationships and absences of relationships are so significant to future development plans that they merit specific statements.

First: In some countries and in some groups, declining fertility that was associated with economic development and social change proceeded apart from programmes of Governments.

Second: Population policies and programmes are products of, and components in, social and economic changes. Separation of the governmentally stimulated and the other impacts of changing social and economic factors on marriage, family and reproduction is an artifact of analysis rather than a reality of the life process.

Third: The great questions of research and policy relevant to the Asian future are not the associations of social, economic and population dynamics in countries of rapid development but the possible roles of government activities in the fields of population dynamics and social change in countries where economic pressures are major and economic growth is slow.

THE CHANGING NUMBERS

The population of Asia was estimated at 1,500 million in 1955 and 2,100 million in 1970. If there are continuing declines in mortality and fertility between 1970 and 1985, the population will be 2,900 million in 1985. These estimations and projections of the United Nations suggest an increase of 569 million between 1955 and 1970, a further increase of 818 million between 1970 and 1985. The increase over the thirty years approaches 1,500 millon people. The demographic implications and the social interrelations cannot be deduced from figures of these magnitudes for a continental area of 27.5 million square kilometres. Perusal of the regional differences suggests that the slow increases are east Asian and that the numerically dominant population here is that of China. The evaluation of the reliability of these projected relations requires data on population, age structures, and vital rates for past years that are not currently available.

The projected population of south Asia is half again as great in 1985 as it was in 1970. The increase is one-third among pre-school children and one-half among school-age children. Even assuming declining fertility, the maintenance of current levels of education would require more than a 50 per cent increase in facilities over the 15-year period. Extensions in availability and improvements in quality would involve not just the current but the increasing numbers.

The two age and sex groups whose changing numbers are most directly relevant to the assessment of the future

Table 38.

Summary Indicators of Population Growth in Asian Regions, 1970 and 1985
(United Nations medium projections as of 1968)

Area	Child-woman ratio		Dependency ratio		Percentage below age 15		Percentage increase, 1970 - 1985	
	1970	1985	1970	1985	1970	1985	Men aged 15-64	Women aged 15-44
East Asia	571	478	665	586	35.6	31.6	34.0	29.3
Japan	337	353	447	497	24.0	24.0	15.2	–0.1
mainland	596	481	686	588	36.7	32.1	35.2	31.8
Other	714	599	850	693	42.5	36.8	56.1	56.2
South Asia	844	744	860	830	43.2	42.0	52.9	51.7
Southeast	834	730	882	830	44.5	42.1	56.8	54.4
Middle south	847	741	851	826	42.9	41.8	51.1	50.2
South west	846	821	870	872	43.0	43.2	57.0	57.0

Source: "World population prospects, 1965-1985, as assessed in 1968" (United Nations, Population Division, Working Paper No. 30, December 1969), medium estimates.

are men in the productive ages from 15 to 64 and women in the reproductive ages from 15 to 44 (table 38). In east Asia, increases between 1970 and 1985 are reduced by the continuation of the transitions in fertility known or assumed to have been in process prior to 1970. In south Asia, increases are great. Men aged 15 to 64 number 309 million in 1970 and 473 million in 1985. The absolute increase is 164 million, the relative increase 53 per cent. Women aged 15 to 44 number 233 million in 1970 and 354 million in 1985. The absolute increase is 121 million, the relative increase 52 per cent.

Two major economic and social problems flow directly from the increasing populations of the present period. The first is employment. The second is the formation of new families. The resolution of these dual aspects of increasing labour force and increasing young families is related directly to the major demographic question, the future of the birth rate and hence the growth of the child population. The past population growth and the structures of the populations are alike unfavourable to economic and social advance. The projected rates of decline in births yield some declines in child-woman ratios by 1985 but the burdens of dependants on productive groups remain high.

THF PLACES AND WAYS OF LIVING

The historic demographic transitions were associated with urbanization and industrialization. In the smaller Asian populations now in transition, there is rapid urbanization and a swift increase in employment outside agriculture. In China, there is a drive to control urban growth along with a form of economic organization that inter-penetrated agricultural and non-agricultural activities. There is rapid urbanization in south Asia.

The absorption of the increasing manpower in productive activities and the provision of living and amenities for the increasing families of the Asian countries must occur mainly within the countries. International migration has been and is limited; that which occurs involves special groups. There are some out-movements of professional people, and there are some arranged movements of labourers. There are movements associated with conflict and civil disorder but these are usually temporary. In some of the countries, there can be expansions of the areas of settlement. In others, there are no major areas for internal expansion.

Thus the major portion of the swiftly increasing numbers of the people must be sustained within national boundaries. The absorptive capacities of agriculture and the traditional industries are limited. If there is to be absorption outside agriculture, there must be massive economic development. But the rates of increase and the structures of the populations are deterrents to economic development. Major problems evolve if area transfers occur without adequate economic bases.

Today, there is exodus from rural areas and there is influx in urban areas, particularly great cities. There are some geographic and economic mobilities within cities but there are also vast concentrations of marginal people. The questions of the economic and the residential changes are also the questions of economic and social development. If the patterns of population dynamics of Asia are in the traditional forms of countries now developed, the changes in places and ways of living will approach determinants of the demographic future.

In the Asian countries apart from Japan and the modernizing countries of the China perimeter, most of the labour force is agricultural. The percentage is 71 in mainland east Asia and 69 in middle south Asia. It is 64.5 for all east Asia and 65.5 for all south Asia. The projections of the ILO for the decade of the 1970s imply major migrations of maturing youth from agricultural to other occupations, but the labour force of 1980 is still mainly agricultural. Some seven in each ten workers are in traditional occupations.

The industrialization of the labour force implies the urbanization of the population, but the two are not identical processes. The urban influx may include high proportions of people who remain marginal in the economy and the social life of the cities and industrialization may occur in rural areas. The United Nations projections of the urban population for the decade from 1970 to 1980 were based on residence in and outside agglomerated places of 20,000 or more. Population in the agglomerated places may be defined as urban, that outside them as rural.

In 1970, some 81 per cent of Asia's population was rural. The projected percentage for 1980 is 78. The relatively small change in rural-urban structure implies major migrations and rapid urban growth, but two-thirds of the projected increase of the Asian population in the 1970s is rural.

Interrelated Changes

The projection of population into future years has become a technique of demographic education, a base for the assessment of the needs and goals of policy, a tool for planning. There are increasing numbers of increasingly sophisticated projections of rural-urban or other spatial distributions, labour force and occupational or industrial structures, education, households and families, and ethnic or other group characteristics. Such projections illustrate the impacts of population growth on economic and social institutions and their changes. But causations are multi-directional. The demographic variables may be viewed as dependent rather than independent. The critical questions in the interrelations of population dynamics and social change are the impacts of the social and related changes on marriage, fertility and mortality. The social changes and the natural dynamics and rates of growth of the population are also forces of change in the migrations and mobilities of the population. They influence rural lethargies as well as urban transformations.

A noting of the many changes now impinging on populations and altering their dynamics is all that can be attempted in the space available here. It should have been accompanied by a noting of the questions of research that are relevant to strategies for induced population change. If this had been done, it would have been apparent that the multiple and interactive relations between population and social change are curiously unstudied.

Increasing longevity and expanding health and health-related services stimulate social change and alter its orientations and its dynamism. Improving health and vitality are basic to social and economic transformations. Declining infant and childhood mortality, improving child and maternal health, and altered sizes of family are viewed widely as conducive to the increasing and the increasingly effective practice of family planning.

The increasing productivity in agriculture is a major force of change, however it proceeds. Improved technologies, new seeds, irrigation, fertilization, and cultivation practices require both management and worker education. There is an associated infrastructure in transport and storage. The market economy penetrates further and deeper. There are interrelations with land ownership, the level of mechanization, manpower requirements, the continuity or disorganization of the rural social order, and the nature of the political process.

The migration between rural and urban areas, the movements to the cities, and the differentiations within cities are major stimulants of social change and are in turn conditioned by on-going social changes in rural areas and in cities. The labour rhythms of employment at specified times away from the place of residence alter the life of the family as well as the orientations of the worker. Requirements in education, training, and skills rise in cities, and children born or maturing in cities generally have more opportunities for education and training. The non-familial contacts and the widened horizons of the urban dwellers are forces of social change and demographic transition.

There are major unanswered questions as to the interrelations between size of agglomeration and psychosocial urbanization today. The city should be conducive to altered conditions of living and re-defined roles for women, particularly for those who participate in the labour force. The major questions, however, concern the preservation or the severance of the traditional relations between urbanization and industrialization. What proportion of the migrants in the city remains marginal to it? Is there social transformation and demographic transition among the peoples who live in or on the periphery of cities but are not truly urban?

The advances in transportation, communication and contact may be the deepest of the new forces and channels of change. In the countries now in transition and increasingly in other countries, there are networks of roads from the village paths to the great trunk lines. There are bicycles, buses, trains and planes. Areas of contact and knowledge expand. There is increasing literacy and increasing production and circulation of printed materials, particularly newspapers. The greatest of the stimulants to social and political change and to demographic modernization may be the transistor radio. With transistors, the stimuli to change can move apart from roads and formal education.

The transformation basic to and inseparable from modernization is education. In most countries, at most time periods and in most groups, educational level is also the variable related most closely to the age at marriage and the child-bearing of women. The questions are many, however, when the focus extends beyond cross-sectional relations to the role of education as stimulant to change in attitudes, life roles, and reproductive behaviour. What are the relations in successive cohorts? How much education of what types is related to how much decline in fertility? Are there possibilities of positive relations in change in the less developed countries, as there were in the rising fertility of some developed countries in the 1940s and the 1950s? What is the role of adult education? What are the relations between mass communication and fertility decline? How essential and how effective is directed mass communication in the spread of knowledge, the change in attitudes and the effective practice of family planning? Then there are the related questions of the influences of direct education on population, sex or family ideals in the schools on the later family cycles and reproductive behaviour of the students.

The questions of the interrelations of education and population dynamics are related closely to those of the changing roles and aspirations of the sexes and the generations as forces stimulating mobilities and migrations, postponed marriage, and reduced fertility.

Transitions in marriage and the family are the institutional bases for transitions in fertility. These are processes of social change, products of past change and stimulants of future change.

The final question on the interrelations of population dynamics and social change pertains to political change and the political process. Nationalism and independence involved social-psychological changes and were stimulants to new aspirations, motivations, and dedications. The goals, policies and programmes of

Governments for the development and welfare of the people are related to population and to social change. Often, and increasingly, they involve family planning or the reduction of rates of population growth as explicit programmes or goals.

The relations between population dynamics, social change and political change are also multi-directional. What are the relations between increasing numbers, increasing economic pressures, disorder or conflict in local areas, and tensions or instabilities at national levels? Are the relations between increasing populations and the political process aspects of on-going modernization or of the failure of such modernization?

The projections of populations that involve simply the demographic variables are based on implicit assumptions of external forces of change impinging on the population in the reproductive ages and altering the rates of child-bearing. The forces usually considered as causative are economic. The extension of analysis to the interrelations of the social structure and social change is difficult. In view of the severity and intractibility of the economic-demographic relations in the countries where poverty is prevalent, pressures severe and resources limited, the questions of on-going or induced social changes that stimulate population change may assume paramount importance.

The presumed lethargies of the traditional peasant societies are increasingly suspect. There are many and interrelated movements in contact, information and aspirations. There is increasing evidence of increasing spheres of frustration. The social changes may alter the milieu and the means of living along with the attitudes and the behaviour of those in the ages of marriage and child-bearing. If so, the capabilities, motivations, and life goals of those children who are born may be altered and the numbers of children born to couples may be reduced.

THE APPROACHES TO PLANNING

The integration of population as a variable in development planning was both essential and educational. The relations between the rates of population growth and the rates of economic growth were portrayed in objective and impressive format. Analytical models demonstrated the economic-demographic interrelations with varying rates of population growth and different timings and speeds of the decline in growth.

The movement from the integration of population variables in economic planning to the planning of population itself was not a long one in the Asian countries. Rapid declines in mortality occurring along with unchanging fertility yielded rapidly increasing rates of population growth. This increase of the population was an inescapable concern of Governments, and the only acceptable path to solution was the reduction of fertility. Emigration of sufficient magnitudes was the reduction of fertility. Emigration of sufficient magnitudes was not feasible. The reduction of death rates to the lowest possible levels was an unquestioned good to people and to Governments. The only remaining growth variable was fertility. But there were deep blockages to governmental concerns with the reproduction of families. Traditional values, religion, and ethics were formulated in historic eras when the problems were the deficiencies in fertility rather than its superabundance. The propriety and the feasibility of government interference in the decisions of families were debated.

The apparent difficulties in continuing increases in food production, the insufficiencies in prevalent diets and the hazards of episodic deficiencies were major stimulants to agricultural research and to the formulation of population programmes. Avowed decisions to curb rates of population growth were difficult. Hence the motivation was phrased in terms of the welfare of families and the development of society. The task was assistance to families in the planning of the spacing and the numbers of their children. The desired consequence was an improvement in the health and welfare of mothers and children.

The evolving recognition of population dynamics as a field for policy and programme was not limited to fertility and family planning. There were immediate and urgent problems in distribution. There was pressure in the rural areas and migration to the cities. The initial and prevalent approach in national and international organizations was the view of urbanization and the cities as problem fields. Increasing demographic knowledge and the results of research in many disciplines demonstrated the limitations to the absorptive capacities of the villages. Many and diverse types of economic investment and stimulated change would be essential if the rural areas were to provide productive employment and minimum subsistence for all their maturing youth. The planning for the associated technologies and practices that permitted greatly increased agricultural production required decisions as to alternative uses of capital and manpower. Gradually the questions of the rural-urban distribution of the population became those of the economic and geographic allocation of resources. Problems of population distribution and manpower allocation were national rather than sectoral.

The developments of population planning and the experiences of Governments in family planning or birth control programmes are too wide a field to be sketched here. Experience in country after country demonstrated the close associations between social and economic transformation and the declines in family size. The changes in marriage, family and the roles of women were related closely to the changing rates of child-bearing among the married. Research relevant to family planning involved far more than the demographic aspects of change and the evaluation of programme achievements. Many factors were associated with efficient administration and effective operation. Scientific and technological research related to means of limitation received increasing priorities as the intricacies of the problems and urgencies of solutions were recognized.

There were similar processes of increasing knowledge increasing urgencies and increasing complexities in the fields of distribution dynamics and policy. The problems became the allocation and utilization of manpower across the continuum from the remote rural to the central urban rather than simply the rural and the urban.

As these changes proceeded, population policies became intermeshed with national policies and national goals. If people were means and ends in planning, a focus on numbers and locations was insufficient. Opportunities for individuals, the good life for families, social and cultural development: these were goals for the future of peoples and nations.

As policies were discussed, adopted, modified, evaluated and expanded, the dynamics of the populations were changing in many of the countries of the region. Again there are many questions for research, and again there are pervasive neglects in research. One of the major questions, if not the major one, is the relation between Governmental actions in population fields and the course of demographic transition.

ASIAN TRANSITIONS

There are hypotheses and models of transitions. There are discourses and analyses of the interrelations of economic, social, political and demographic variables in the cross-sections of censuses and surveys. Replication of the European past in the Asian future is an unlikely event. What, then, are the realistic assumptions as to the future dynamics of Asian populations? The initial analytical approach lies in the transitions that are past or on-going in Asia itself. These transitions are localized geographically in east Asia and culturally among Chinese and Chinese related peoples. Although they cannot be taken as forecasts or models for the remainder of Asia or for regions within it, they are Asian transitions. Information on their similarities and differences with each other and their divergences from European transitions is a signal addition to comparative demography. Such information also provides a relevant quantitative base for the assessment of the probable dynamics and the evaluations of the needs and types of government stimulants or interventions required elsewhere in Asia.

Japan's completed transition is at once the initial omen of the Asian potentialities and the most distinctive of the Asian transitions. There were bases for modernization in late Tokugawa Japan. A century of industrialization, urbanization and demographic transformation separated the initial changes in vital rates in the 1850s from the attainment of a net reproduction rate near unity in the 1950s. Japan's population growth occurred without modern scientific, technological and administrative advances in the control of mortality or of fertility. Mortality declined slowly and erratically as the forces of increasing medical and health services, controlled epidemic and infectious diseases, and improving nutrition were blunted by the hazards of urban life and industrial labour. Fertility declined slowly with advancing ages at marriage and control among the married in a social structure oriented to stability rather than to change. Education was compulsory for boys and girls, but it included indoctrination concerning the roles of girls as the mothers of sons.

Japan was in late transition by the 1930s. There had been discussions of policies to stimulate the decline in fertility but the first of the policies to be adopted was one to raise birth rates. After the Pacific War, the devastation, and the repatriation, a "baby boom" raised the spectre of escalating future populations. There was discussion of policy but no policy. In the years when the economy was being rebuilt, Japan acquired both the new technologies of death control and the new antibiotics that made induced abortion medically feasible. Mortality and fertility declined rapidly. Ten years after the end of the Pacific War, there was an intrinsic balance of births and deaths. Today there are questions of policy, but the dialogue concerns the desirability and the procedures to raise the birth rate or to maintain it, not to lower it.

Several aspects of this first completed Asian transition should be noted. *First*, demographic transformation was an essential aspect of economic and social development. *Second*, declining vital rates came early and proceeded slowly. There was no crisis of growth. *Third*, urbanization was an integral aspect of the transitions of modernization. There were no cumulations of people on the land. *Fourth*, there were discussions of anti-natalist policies in years of crisis but no policies were adopted. *Fifth*, the Japanese Government did permit induced abortion, sterilization and contraception without legal penalties. It did not legalize abortion as a population policy. *Sixth*, both the legalization of induced abortion in the private sector and the later inclusion of contraceptive services in health networks were justified on the grounds of the health of mothers and children rather than as population policy. *Seventh*, the advancing age at marriage was a continuing factor in the Japanese transition, while the availability of cheap, safe and private induced abortions was a major factor in the rapid completion of transition in the early postwar years.

The transition of the Republic of Korea is moving rapidly, with a combination of a driving governmental family programme and diffusing control practices not associated directly with that programme. The Korean transition, as the Japanese one, has an ancient lineage. There was generally declining mortality from 1910 onward. There was urbanization, expanding though limited education, and major out-migration, temporary and permanent, throughout the colonial period. There were advancing ages at marriage for women in all the provinces of Korea in the years from 1925 to 1935. Declines in fertility came recently, and they came swiftly in urban and in rural areas. Gigantic internal movements made Seoul a city of more than 6 million inhabitants and yielded depopulation in many rural areas. Ages at marriage moved upward swiftly. Induced abortion is neither legalized nor prosecuted. Its practice re-enforces the impacts of the increasing contraceptive practice.

Rising ages at marriage and rapidly declining fertility have characterized the women of the city states of Hong Kong and Singapore. In Hong Kong, a family planning organization that is private receives government subvention. In Singapore, the government programme is economic and social as well as medical.

In these small countries of the China perimeter, there is high economic growth, rapid educational advance and rising income. Changes in rates of growth, migrations, ecological adjustments and the characteristics of people are aspects of the total transformations of modernization.

The major unanswered questions in Asian demography concern the population dynamics in China. Contraception, abortion and sterilization are available through health services that extend from the central organization to the paramedical personnel in the production brigades of the communes. There is an altered family law and a changing family institution. There are changing roles and responsibilities for women. There is advancing age at marriage. There is reputed to be experimentation with persuasions and sanctions to avert higher order births.

In south Asia, the bases for transition are being laid in the programmes of Governments, the pervasive social changes and the escalating aspirations of the youth. Analyses at national levels may be appropriate in the smaller countries. In the great national population, the analyses of transitions that might contribute to policy and programme concerns areas, groups or types of population within countries.

Future Transitions

The increasing manpower, the high levels of underemployment in the largely agrarian economies, the pressures of people living at subsistence levels in rural areas and in cities, the limited education, and the low incomes of the large Asian populations are indisputable facts of the present period. The historic experience of European peoples, the contemporary experience in east Asia, and the behaviour of groups within all countries suggest that rapid economic growth, swiftly rising incomes and increasing educational levels among the masses would be accompanied by declining fertility. The deep if not insoluble problem is the achievement of the economic base for transition in the existing setting of rurality, poverty, illiteracy, traditionalism and high growth. In view of the present status of economic and social developments, the relatively low levels of the mortality, and the aspirations of the people for wider and more abundant lives, can advancing ages at marriage and declining fertility among the married come in association with family planning programmes of Governments and stimulated social change? Which among the many social and related changes now occurring are most influential in altering family aspirations, strengthening motivations, inducing effective control practices and generating a small family ideal of two children? The concepts, the hypotheses and the design of the research are complicated. Diverse experimentation is essential. The penalties of avoidance or failure in research and in policy formulation may be major. Social paths to demographic modernization may be the only smooth ones in the present settings where problems are acute and time for resolution is limited.

16. TO MAKE PEOPLE COUNT*

The Island

About ten years ago, a school was opened on a small island in the Pacific. The island has not been the same since.

The changes that have taken place are impossible to enumerate in sequence; so many seem to have happened simultaneously. A description of some of the changes is here attempted although not in chronological order.

People on the island had always lived well. There was more than enough food, nobody needed to go hungry, and the social structure of the community was such that there was a great deal of sharing of food as well as labour. The island did not have to rely on the importation of food and materials. Most families had ways of raising a little cash, by selling copra, so they could buy luxuries.

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Children and young people had a well-defined place in the society. The activities of children up to the age of, say, nine or ten might have seemed like playing but much of it was learning and even providing food and other products for the family. Girls as well as boys helped in clearing land, planting and weeding, and harvesting certain crops. Boys, and to a lesser extent girls, spent much of their time on the beach and in the ocean fishing, collecting shells and so contributing in a minor way to the food supply of the family.

The family unit was, as in probably most traditional societies, the extended family consisting of not just the parents and their children but also of grandparents, uncles, aunts and cousins. A family was a very close unit, the members having close, culturally determined ties and often, although not necessarily, close personal ties.

Most families also had ties of blood relationship with other families on the island. In a sense, the island could have been considered one closeknit family.

A person's worth was defined by his family. The individual's place in society was not determined by what he did, what job he had or how much money he made, but by his family ties. Although some people were, of course, more central in the community in terms of rank and their importance in decision-making, no person was marginal and none was cast out.

Wealth was not associated with individuals but with family units.

Wealth was counted in land, or more accurately, the use of land. There was no way to buy land, although there were traditional ways of acquiring the use of more land when, for instance, a young couple needed more space than the family had to share.

The school building was constructed on land donated by one of the wealthy families. The building was a standard design, developed on other islands of the group. Materials for the building, such as roofing and glass, were brought in; and, even though some of the men of the island helped in the construction, much of the work was done by imported labour.

Two teachers were sent to run the school. They were native to the country but from another island. One of them was married and brought his wife and young son, the other was single.

There was no resistance to the school when it first opened. The school was part of the national education system of the country. Long before the school opened, officials from the Education Department had visited the island and had convinced the islanders that a school was something good to have. It is probable that the officials had a more accurate preconception of what might result than the islanders, but even they could not have foreseen all the changes that took place on the island, and in a short time. The school was undoubtedly seen as an instrument in the development of the island, but what happened was not planned.

Learning

The first years, attendance was very irregular, but in time the children as well as their parents became accustomed to a new rhythm of activities, a rhythm that had no relationship to the traditional ways of life and was dictated instead by the clock.

Children going to school of course could not work in the fields, nor could they fish. A part of the community was removed from the productive life of the island. This meant that other people had to take over some of the traditional tasks of young children, but these tasks had been minor, and it was not difficult to overlook the economic loss to each family.

It was more difficult, however, to accept the increasing lack of opportunity for children to learn the island's traditional ways. Although there was never anyone designated to teach children to fish, or to plant, or to harvest, the years of childhood were a period of learning under the tutelage of all adults. Without professional teachers, and without a curriculum, a pattern of learning was nevertheless well established in the culture of the island.

A child had to learn how to be an adult. The often complex relationships that are typical for any society had to be learned, and so did behaviour appropriate to different situations. Boys observed, learned and practised how to be men; girls learned to be women. Children no longer learned this as well as they had before.

Children learned other things of course. They learned reading and writing, which most of their parents did not know. To parents it became a source of considerable concern that much of what the children learned in school seemed strange and different and not relevant to life on the island. Much of the new learning did not seem to fit into the old way of life, which people now began to think of as the "old" way of life.

A dramatic example of new learning was what children learned about time as a quantity rather than a quality: the right or proper time to fish had been linked to the moon, the tides, seasonal migrations of fish, a mood, relationships with other people. There was never the necessity for doing a thing before time would run out; there were no deadlines. People had a sense of timelessness. The past and the future were a stage on which the present played.

Now, for the children at least, the day was broken up into distinct and regular pieces. Class periods were an hour each: there was, of course, no word for "hour" in the language of the island. This new division of time was felt beyond the classroom. Children had to be ready for school at seven in the morning. The family had to adjust to time as something that had arbitrary limitations, was to be used and could be used up if not managed and planned.

The limits of a clock have nothing to do with the "rightness" of something. These limits are foreign, abstract and meaningless in the context of traditional life. Probably for the first time children on the island were bored. Days that had been spent in meaningful play now become intervals to be filled; where before there had been a natural rhythm of living, now an effort was required to use time.

Parents learned to think of time as an irreversible flow of events, although perhaps not as hours to be filled. Adults perceived that there was a significant break in the continuity of generations. The children would no longer fit into life as it had been lived. This break, this change, was irreversible.

The children themselves also perceived that they had broken with the past. It was this, perhaps, that made children insist on continuing their education off the island. Parents too, of course, often wanted their children to get more education, although certainly at first they did not realize that this meant that, after completing their education, the young people would stay away when they found employment elsewhere.

Social Relationships

Quite another sequence of events was set in motion by the presence of the teachers. Before they came there had never been anyone who lived on the island for any length of time without well-understood relationships with at least one family of the island. The teachers, however, had to find a place in society without "belonging" to any of the families: such a role simply did not exist. Previous immigrants had been either brides who were brought back by the young men of the island, or the husbands of island girls. The teachers however were not related to anyone, they did not have land, they did not grow anything, nor did they fish. They were not foreigners, yet they did not fit.

They had to fit, however, because they were part of the school. A new role had to be created for them, the role of "teacher". This was an important innovation.

Nor did the teachers fit into economic life of the community. They had to be dependent on others for their food. Since, however, they had no ties with any family, the community at first did not know what to do. Food, particularly staples, had never been bought and sold. Money was known, of course, and used, but the idea of having to pay for food was foreign, and even somewhat repulsive, and symbolized the alien status of the teachers. So, the role of teacher had to be accepted in the economic fabric of the community as well as in the pattern of human relationships. This created much confusion.

The confusion was, of course, resolved. When the teachers had first arrived, the most respected families had "adopted" them. It soon became evident, however, that these newly adopted members of the family could not fulfil the obligations of family members, if for no other reason than that they had no time.

The teachers themselves, although appreciating what they called the hospitality of their adopted families, sought other ways of obtaining food and some services by offering to pay.

The two families that first grasped the opportunity of providing food in return for money were among the less respected families of the island. By becoming the first entrepreneurs, they gained a certain prestige, although it was a kind of prestige that had been unknown and did not really fit the traditional values. Prestige and status had always been bestowed on a family for its collective generosity, and above all for the quality of its social relationships. The new prestige was a recognition of initiative, a recognition even of ability to adapt to new circumstances.

Self-esteem

With this movement along the path of modernization, a subtle change had taken place in the feeling of people about themselves. Before, people knew that their life was good and meaningful. There was tragedy of course: sickness, death, unhappiness; but these were to be expected. Beliefs, traditions, their way of life, were as they had always been and as they should be. Now there was an alternative: a new way of life that was attractive and therefore depreciated the old. A sense of loss was felt because most adults felt left out of what was new, without being completely satisfied with the old.

One of the teachers was unmarried, and it appeared that he refused to be matched to the island's eligible daughters. Perhaps because of his education he was a modern man, and the girls of the island did not come up to his standards; they were "beneath" him. The people of the island began to feel that the traditional qualities that they had valued were somehow no longer sufficient.

The sense of having been left behind was handled differently by different families. Some, for instance the entrepreneurial families mentioned above, threw themselves whole-heartedly into what they believed were modern activities. Others resigned themselves to living out their lives in the old way, but wanted to have their children learn about the new.

The Complexities of Social Change

The sequences of events as described were not, of course, the result of just the introduction of the school. Some of the changes in attitude, in behaviour, in the whole social structure of the island, had already started as a result of other outside influences brought, for instance, by traders and missionaries. The school accelerated and focused a process of "modernization".

The island in this illustration is a model, not a reality. It could very well exist: it is a realistic possibility. It represents the many semi-isolated communities all over the world that are being absorbed into the modern world with all the pain and glory that accompanies the process.

An island in the Pacific, especially an imaginary island, may seem too idyllic to be representative of human communities elsewhere. Yet there are villages in southeast Asia that are in all essentials similar to this island. Children may spend their youth in the jungles or in the rice fields instead of on the beach; instead of a school it might have been a trading post or a small industry that started a chain of changes. The process of modernization, however—the process of adaptation to the modern world—can be observed in many very different locations.

The island has been deliberately described from the point of view of the aspirations and feelings of its people, because in the end these will shape their future.

Change as a process of adaptation has also been deliberately highlighted. Alterations in the environment, both physical and human, induce adaptations. When customary ways of dealing with situations no longer work, people find new ways to deal with new problems. The process is fluid. As a fluid seeks a level, so too must communities of human beings seek new ways of coming to grips with reality as it is and as they feel it.

For the sake of clarity, the island will continue to be used as example; the interwoven complexities that form the bonds between man and his environment can best be illustrated in a community, even if imagined; the nature as well as the effects of social change and population dynamics can best be understood from the point of view of people in a community rather than from statistics.

The Effects of Social Change

Many of the interlocking changes that occurred on the island seemed to lead to disruption and destruction: they broke traditions, and the cultural unity that had characterized the island was disturbed.

Social change seems to have this effect, particularly when it is compressed into a few years. Rapid change is often experienced as a steam-roller that flattens a known, all-encompassing reality into a two-dimensional reflection of the past.

No community of people has ever existed without experiencing change. The description that travellers, novelists and anthropologists give of the peoples of the world is a snapshot that often gives a misleading sense of permanence because the perspective of history is usually lacking. People do change their behaviour, their institutions, even their values. What has perhaps characterized the last few centuries, however, is very rapid social change on a world scale.

Social change is not a simple process: it is a total process that affects people *in* a community and *as* a community. This process proceeds at many different levels simultaneously. Social change is not a neat chain of cause and effect; a number of causes result in a number of interlocked effects, and each of these effects in turn can be the cause of further changes.

A community of people is an organism. It is a whole. It is a complex system of individuals, their artifacts and behaviours in a unique environment. The system as a whole is determined not so much by these parts, however, but by the interrelations between parts.

Individuals are, of course, an integral part of community; their behaviour constitutes the necessary links between people. Human beings communicate not only with words but with deeds. What people do is a necessary response to their environment, both internal and external, human and non-human. As an organism functions and maintains itself through the whole complex of the interactions between its parts, so does a human community: its interactions are the actions and reactions, the behaviour, of its people.

When the equilibrium of this system is disturbed, it will attempt to gain a new equilibrium. People will change their behaviour when they perceive that customary behaviour is no longer functional. New behaviour will become traditional behaviour again when it is accepted into the community's changing reality.

Organisms grow. The island community is adapting to a relatively sudden invasion of things and ideas. The environment of the island is changing, and the community is adapting to this new environment, which today includes soap and matches, tin roofs, cotton, outboard motors, pots and pans, penicillin, canned goods and plastic toys. It also now includes money as a symbol of a world outside, books, Christianity, modern medicine, and individuals who define their worth not by their family but by their profession, and families who define their worth by their initiative and monetary wealth.

All these things the islanders adapted to by enlarging their community to incorporate as many of these new things as it could absorb. The pressures to adapt were enormous because the outside was pressing in.

Population Dynamics: Migration

The people of the island were also pressing out. Children and young people were leaving the island and most of them would not return. There were few families who did not have children in schools abroad. This new kind of migration significantly affected the feelings of people.

The apparent peaceful nature of many traditional societies gives an impression of population stability; below the surface of this seeming permanence, however, one finds people almost everywhere moving about a great deal. History records the mass migrations, but there is ignorance of the steady movement of individuals and families across the face of the earth.

The island was settled by migrants a thousand or more years ago. Since then families have left to settle other islands. In the past, however, families moved, not individuals. The smallest viable unit of society was considered a group of people of all ages who had essential and functional interrelationships. A family might break up, a part would move and a part would stay, but each of these parts would form the semblance of a family unit. Migrants expected to set up a life patterned in all important details after the parent community. It was as if a community sent out seeds, each of which was expected to grow into a copy of the parent community. Migration was growth, the expansion of a culture.

Young people leaving today do not extend traditional culture, they go to become part of a new culture, existing outside. Parents and others in the community see this new migration as depleting rather than extending their known way of life.

In many parts of the world this movement of individuals away from traditional life to accept modern life is causing significant demographic shifts. Rural areas in many parts of the world are becoming stagnant backwaters with a highly unbalanced population; a predominance of old people and young children, few young adults.

Urbanization

The term "urbanization" is used here to refer to this new kind of migration: not the movement of people who, either peacefully or through conquest, extend a fairly homogeneous culture over a wider geographical area, but rather the movement of people away from a traditional culture into a modern culture, with no intention of setting up a copy of the old ways.

Even in the past, however, migrants did not always succeed in creating copies of the parent culture, even though that may have been their intention. Urbanization is different in that migrants do not attempt to establish societies modelled after the known parent culture; they attempt rather to adapt to an existing culture that they perceive as being "better".

In this sense, urbanization does not necessarily refer to migration to cities, but rather migration to a different style of life. This kind of urbanization is found even in the Pacific, although there are no major urban centres: there are today strong movements of people from remote islands to more central ones, and from these to foreign countries if that is possible. Very much the same pattern of stepped urbanization can be observed elsewhere.

Urbanization is universal. On a world scale, the increase of urban populations is much greater than total population growth.

Urbanization may be the result of population pressure: in areas where traditional ways of life do not allow intensification of the use of the environment necessary to accommodate an increased population, people may feel pushed away. Or, perhaps, people feel pulled to the attractions of "the city". Whether pushed or pulled, however, there is a sense of wanting to (or having to) change one's pattern of life.

Urbanization is one aspect of the whole complex pattern of social change now surging across the earth. It is a movement that follows changed perceptions and needs and also causes changes in individual and communal life styles, for those who move as well as for those who stay. Since it is often young people with the most initiative who move away, the capacity of the parent community to adapt to new circumstances is further reduced.

Urbanization impoverishes the parent culture. It is not an expansion but a reduction. The island's children will not come back, or, if they do come back they will not be able to live in the old way.

Population Pressure

The movement of children and young people away from the island is not experienced as a response to population pressure, although the population of the island is increasing and has been increasing for centuries.

People of the island are aware of the fact that there are more souls in this generation than in the last, but this is seen as a natural development and a sign that things go well. There is still land to be cleared if the need arises. In a traditional society, the only capital required to develop new land are the natural resources found in the environment itself and manpower. Neither natural resources nor manpower are yet in short supply on the island.

The growth of the island's population is perceived as a sign of health, an indication of the vitality of the community. The environment is not perceived as so crowded that action must be taken.

In this respect too, the islanders are not different from the millions still living in traditional communities elsewhere. Even though numbers may increase, it is far less stressful to adjust to an increasing population, particularly when growth is equated with health, than to move away with all the unknown dangers inherent in such a move.

People become concerned with problems of over-population when they experience that too many people threaten their way of life and they can no longer cope with the stresses that result. Action can only follow concern, and concern must follow awareness: we will step back from the comfortable warmth of a fire only after we have experienced its scorching heat.

There is no established standard of crowding: only when crowding is perceived as a psychological reality, rather than as a statistical expression of people per unit of space, can spontaneous action occur as a means of reducing pressure. For spontaneous action to occur, it is necessary that people are aware that there *is* a problem, and they must feel that action is better than inaction.

In the past, when population pressure was experienced, societies responded by expanding territory rather than reducing population. This response is impossible today. Migration across national boundaries is rigidly controlled and severely limited. Transmigration, the movement from one area of a country to another, even if successful, would alleviate population pressure only temporarily with present rates of population growth. Today the only means of regaining a balance between population and environment must be a reduction of further growth. In the past, growth may have been thought of as a constant, territory as a variable: today, obviously, territory is a constant and growth must be adjusted to the limitations of the environment.

Population Growth

People have responded to perceived population pressure by spontaneously seeking ways to control fertility. Methods of preventing pregnancy were known at least 4,000 years ago; use of contraception spread to large population groups beginning, perhaps, 100 years ago. This spontaneous emergence of new reproductive behaviour took place within the context of a radically altered environment, which included such far-reaching innovations as increased personal choice in life styles; new possibilities of escaping what had been seemingly immutable circumstances of poverty and disease; and widely shared benefits of an improved standard of living that could be relied upon to continue, and so give immediate improvements of health as well as a better life for future generations. This vast social change, called the industrial revolution, created a new environment that was increasingly man-made and provided a refined technology that could increasingly control the environment. One of the consequences of the ability to control the environment was a steadily increasing population.

It is doubtful whether any group of people has ever had a prolonged period in which its size did not fluctuate. When the forces operating in the environment are not well understood, and so not well controlled, stable populations cannot exist. The widely known population curve showing a gradual increase of the world's population with a sudden upswing beginning, say, 200 years ago, is an abstraction; it is the cumulation of thousands of separate populations, each fluctuating widely. Many groups of people must have died out, others must have grown at rates much greater than the over-all world's population. Most populations must have been very unstable, with periods of growth alternating with periods of sometimes catastrophic decline.

In fact, graphs that show changes in gross birth and death rates, from pre-modern times to the present, show that rates fluctuated very much from year to year, and that only within the last century, and in much of the world perhaps only in the last 25 years, birth and death rates have started to show a more even trend. Technology, in all its many applications, has not only reduced the death rates of virtually all the peoples of the world, it has also controlled periodic fluctuations.

In the West, the factors that caused population increase were part of a whole complex of social change that included an improved technology as well as significant changes in the structure of society, in the economic and social role of individuals, and in an organized ability to make the fruits of technology rapidly and widely available to large numbers of people.

Response to Population Growth

Voluntary conception control is a meaningful response to these altered circumstances in Western countries.

The history of the past hundred years or so shows that some people in the West spontaneously began to control fertility long before modern contraceptives were available: in fact, modern contraceptives were developed in response to their need. It is known that people practised fertility control in the face of seemingly massive barriers in the form of religious and secular laws prohibiting such behaviour. The fact that people did persist must mean that the need was great and that they received meaningful and sufficient reinforcement.

The post-industrial world reinforces the behaviour of people who voluntarily limit the number of their offspring: children are no longer an economic necessity, or even an asset; individuals rather than families are the unit of economic activity, wealth can be accumulated; when parents are able to acquire a modicum of wealth and economic security, either actually or potentially, through education, fewer children will each have a greater share of this wealth and can be better prepared to improve their own lives further.

More recently, observations of the continued decline in birth rates in such countries as Japan, and Singapore, suggest that similar circumstances are now inducing people to control fertility in these countries. What characterizes these countries is a process of social change, involving industrialization, urbanization and increasing opportunities for individuals to live better and to affect their future by their own actions: all are factors that not only have changed the human and physical environment, but make it increasingly visible to people that circumstances have changed.

These countries are as yet the exceptions among the nations of the developing world. Although social change probably occurs everywhere, the structures of societies and the role and expectations of individuals are as yet widely different in different areas.

Among Westerners, and some non-Westerners as well, the dangers of unlimited population growth are now perceived. In modern society, there is now widespread concern for overpopulation.

This concern may have been initiated by increasing competition for jobs or housing. What is more likely, however, is that what is creating this awareness of the problems of population, is the greatly increased consumption and production of goods (as well as a greater abundance of wastes that one no longer knows what to do with), in short a much more intensive use of the environment. In a modern community, the number of cars increases much faster than the number of people. Each individual needs more and makes greater demands on the resources of his environment. It is this, as well as projections of future population size or density, that causes concern for the dangers of further growth. The earth would be too small already if all its people were to live as Westerners do.

Varied Responses to Perceived Population Pressure

Even in industrial societies, however, voluntary fertility control is found among certain classes of people only: those who create and experience an environment in which they feel that they have the ability to control their lives. The poor have not acquired wealth and security, nor do they share the educational opportunities of the rich. There is not much to share among the children of the disadvantaged, so that the number of children does not make much difference. Poor parents do not believe that their children will be better off than they are, and society does not give them much hope that improvements can be brought about by their own actions.

Similarly, in the developing countries, the proportion of the population that has been able to create and experience an environment where wealth can be accumulated and individual initiative can increase economic security and physical health, is as yet very small. There is, for the most part, no advantage in smaller families, or, the advantage or even disadvantage of having fewer children is not very obvious.

Prevention of pregnancy is a foreign concept in the island as in many other communities—even postponement of pregnancy is not seriously considered. Infanticide is said to have been practised in the past, but almost certainly is not practised now. Induced abortions are rare, although methods for inducing abortions are widely known. In a traditional community, no child is unwanted. Large families are a sign of prosperity as well as a visible manifestation that things go well. Large families are thought to have closer ties, a greater cohesion, and the cohesiveness of a family is perhaps its greatest asset.

A few women on the island have accepted contraceptives, all of them mothers of at least six children. The island now has a modest dispensary, staffed by a nurse-dispenser and visited irregularly by a health team, including a doctor. The dispensary provides contraceptives and contraceptive counselling.

It is possible that these first contraceptors will influence others and that, in time, the practice of preventing pregnancy will become an accepted tradition. This seems unlikely, however, without a much more widely shared need for this new behaviour. Contraception has as yet no place in the life, the beliefs and the traditions of the people.

It is understandable why people would *not* want to practice contraception, it is much more difficult to understand why they would. Why have individuals adopted behaviours that seem radical departures from past norms?

Different Motivations for Behaviour Change

The primary motivation of the island women was probably physical exhaustion: a condition that must be known to all women who have had many pregnancies with only minimal time between pregnancies to recover, plus the beginnings of doubt concerning the previously never-questioned value of having many children. After all, children were now obviously going in a new direction, they no longer quite fitted into traditional society and they would not enrich the family as before. Availability of contraceptive services made it easier to act.

Other women, in other circumstances, have different motivations.

There are women who have learned that they need no longer fear for the survival of a sufficient number of children and now feel that they can rest between pregnancies.

Some women feel that they could give their children more if there were fewer of them.

Finally there are women who realize that tomorrow's population will strain the resources of the planet even more than today's, and that a reduction of population growth can only be the result of their own and their neighbour's reproductive behaviour (even though the immediate cause of this motivation may be more intensive use of the environment, rather than more people).

These varied motivations are different responses to different circumstances. Circumstances, or more accurately, the perception of circumstances, determines the necessity for adaptive behaviour. It is to be noted that the types of motivations sketched above are a function of the total aspects of a community rather than a function of personality.

Thus, adaptive behaviour can be seen as a response to a situation as the actor perceives it: behaviour change will rarely if ever result from the perceptions and needs of another. Certainly a behaviour change as radical as a change of reproductive behaviour must be the response to a real experience of need, and the changed behaviour must be meaningful.

Culture Determines Ability to Initiate Change

Communities vary widely in the extent to which they allow individuals to experiment with new behaviour. In what has loosely been called the Western world, values are different from those in most traditional societies. Because each individual is thought of as an independent unit of society, with a large responsibility for his own development and satisfaction, and presumably a considerable control of his destiny, it is not surprising that Western man has been able to accept change as something desirable.

In a modern society, individuals obey their conscience, some inner voice that assures them that they are right, even though they may receive minimal reassurances from their society.

This does not mean that individuals need no approval, at least from some of their peers. Modern society, however, has become so complex that there is not just one community that a man belongs to, he has a choice. Multiple group membership, which characterizes modern society, is one of the reasons why change can continue in all directions: there is a great variety of life styles and values, and almost any behaviour can find approval from one group or another. This situation does not exist in more homogeneous traditional societies.

Thus, possibilities for change as well as reasons why one might want to change reproductive behaviour, vary widely, and they vary perhaps least because of individual differences. Communities determine different degrees of awareness of why a reduction of fertility might be good: an awareness that is a function of a number of factors unique to that community.

And finally, people have different capacities for initiating change, dependent for the most part on the extent to which societies allow them to be different.

Reinforcement of Behaviour Change

People are certainly not incapable of changing behaviour, as was illustrated in the example of the island, or as was demonstrated by the people of developed countries. Social change, however, in all its ramifications of changing behaviour, changing social structure and changing values, is a response not a plan, and a new response to altered circumstances must receive some confirmation of its appropriateness.

When a few families on the island began to sell food to the teachers, they received confirmation of the rightness of their actions almost immediately: they were rewarded. They were paid in money, which was known and accepted as a medium of exchange. When the community learned to accept the two teachers in their new role of teacher, it was rewarded by the resolution of a pressing conflict.

The few women who experiment with contraceptives receive few signs that what they do is right, and the signs are ambiguous. They do not receive support from their families, because the families do not know that contraceptives are being used. They receive no encouragement from their husbands, even from those husbands who know their wives are using contraceptives, because the husbands see no need for this new behaviour. The community does not endorse contraceptive use, because it does not think there are too many children, nor even that any one woman has too many.

What encouragement the women do get probably comes from the medical personnel, and that is ambiguous at best. Since they have to go to a clinic, a medical service, to obtain the contraceptives, there is the suggestion somehow that preventing pregnancies has something to do with sickness. This perception is further strengthened because the clinic requires a physical examination, and regular and scheduled follow-up visits, so that doubt is sown about the safety of contraceptives.

Thus, she is not rewarded: there is no clear cut reinforcement of the new behaviour as right. The only reinforcement the few contraceptors receive is probably the very personal sense of relief in not having to bear another child: important as a very personal reward, although perhaps asocial or even immoral in the context of the culture. In traditional societies, personal satisfaction is often considered less important than approval by others. The sense of relief in not having to bear more children may be a reinforcement of a new behaviour, but a weak one in traditional cultures.

This lack of meaningful encouragement of spontaneous change is probably more common than is realized. Those who work to encourage others to change their reproductive behaviour might consider that often their attempts to help may indeed hinder because they put up barriers rather than provide encouragement for adaptive behaviour.

For example, those who work in family planning programmes, often place great emphasis on prevention of pregnancies as a means of controlling population. Population, however, is a statistical concept that cannot easily be experienced: to parents, the number of children they have is an immediate reality, but population or population increase is not.

Equally ambiguous is the insistence on having a woman choose what contraceptive she wants to use. How can a woman choose among a bewildering variety of seemingly radically different kinds of contraceptives when she has no knowledge of or experience with any of them? In fact the medical personnel usually have a definite preference. It may reduce immediate anxiety to be told what to do, particularly if those who recommend a certain procedure can also communicate their confidence that it will work, but it is not strong reinforcement.

The fact that contraception today is considered the almost exclusive domain of the medical profession has already been mentioned as an ambiguous encouragement at best. If preventing a pregnancy requires the fiat of a Western-trained physician, if it requires the whole apparatus of a modern clinic, if it requires a prescription and close follow-up, it must be rather unsafe, not very healthy: something utterly beyond lay competence to understand and whole-heartedly accept.

Support for a new behaviour need not come from the community of course, it can be provided, as in the examples given above, by persons outside the community. Often such encouragement has less validity, however, because outsiders do not share the values of the community, and sometimes do not understand them. Reinforcement of behaviour change must be real, it must be meaningful.

Meaningful reinforcement can be found within one's self, it need not be external. The woman who uses contraceptives because she has realized that many closely spaced pregnancies have sapped her strength, will be almost immediately rewarded when she gains time to regain her health. One could almost say that her reward is physiological.

Nor does reinforcement need to be in terms of immediate rewards. The woman who controls her fertility for the sake of the economic well-being of her family and the future well-being of her children must be satisfied with a much less immediate reward. Such delayed reward, however, can be experienced as valuable if there are other, psychological, reinforcements of her behaviour. Indeed, many women practise contraception contentedly with only the expectation that such behaviour will be rewarded in future, because her reward lies in her satisfaction that the future will prove her right.

Conclusion

It is probably realistic to consider the present time as a period of severe imbalances that are in the process of being resolved. The spontaneous emergence of patterns of fertility control is an example of responses to perceived needs. These needs are a function of the unique environment; the response—adaptive behaviour—must find some positive reinforcement from the environment.

Circumstances that led some people to change their reproductive behaviour are not duplicated everywhere; removing barriers does not automatically result in spontaneous changes when the reasons for change are not present; the availability of contraceptive services does not motivate people to use them, although it facilitates new reproductive behaviour when people seek to change.

There is no question that numbers of women in many different localities wish at times to postpone the next pregnancy, or even to avoid further pregnancies altogether. Modern contraceptives have made it easier for these women to follow their inclination. Experience everywhere has shown that for motivated women to use modern contraceptives is not particularly difficult. Even motivated women, however, must receive encouragement of contraceptive behaviour if they are to continue and continue successfully.

The people of the island were not adverse to change, they adapted to their new environment, as do people everywhere. Adaptive behaviour, however, must be meaningful within a wide social context. It is perhaps fortunate that there is still a great variety of societies, each defining meaning to their members in a unique way. A multitude of adaptive behaviours, using the combined strengths and creativity of all men, will result in one world in which all can have a share of the good things of this earth and not more than one's share.

17. INTERRELATION OF POPULATION DYNAMICS AND SOCIAL CHANGE*

The reproductive performance of a population is intricately related with social organization, social norms, religious beliefs, economic goals, technological level, and much more. A number of social and cultural factors, like early marriage, a contempt for spinsterhood, a strong desire either for a male or a female child, and so on tend to promote fertility. But there are a number of other such factors that serve to lower it: these include the emphasis placed on abstinence and celibacy; rules relating to the remarriage of widows; prolonged lactation; prolonged absence of spouses for cultural or economic reasons; frequency of divorce; and practice of such birth control measures as coitus interruptus, induced abortion, and infanticide. The level of fertility in a population, therefore, is the *net result* of mutually offsetting tendencies. Thus the net effect of the social changes on fertility that take place as a result of changing economic circumstances, new communication systems, colonialism, independence, schooling, and the like might be neutral negative or positive.

In the transition to industrialization and urbanization (a period of many social changes), it is conceivable that the fertility level could fall but, in fact, it almost always rises. It did so in England at the outset of the industrial revolution and led to a "disintegration" of village society. The proximate causes were a higher incidence of illegitimacy, a lowering of age at marriage, a higher over-all marriage rate, and less frequent or less effective control of conception within marriage. Japan's experience was similar (Petersen, 1969, pp. 420—429).

The same may also be the case in India. Data show that women in joint families have a lower fertility level than those in simple families and that the social changes due to urbanization are causing a decline in the number of joint families and seem to have led to an increase in marital fertility (Agarwala, 1970, p. 105; Murthy, 1968, p. 43). Nag (1967, p. 162) has written:

> It is generally a matter of shame for women to give birth to children after they become mothers-in-law, particularly in joint families. Mothers-in-law are subjects of popular jokes if they become pregnant during the pregnancy of their daughters or daughters-in-law. Hence, women in joint families tend to limit the frequency of coitus after their sons are married.

Research done in Karachi also demonstrates the same tendency, namely, that fertility is higher in women in nuclear families than in extended families (Hashmi, 1965, p. 102).

Health and long life are near universal goals for individuals and social groups, and improvements in both are always welcomed. There seems always to be far more resistence towards birth control than towards death control. Advances in medicine, improvements in public health and in internal security, and the like have caused mortality to decline in many developing countries to quite moderate levels. Once these rather lower levels have been reached, further declines in mortality are difficult to attain in the absence of (rapid) social and economic changes.

A moderate leve of mortality, with a death rate of 15 to 20 per thousand which is accompanied by a high birth rate of 40 to 45 per thousand results in a very rapid increase in population, at a rate of 2.5 per cent a year or more. The resulting population problem will be even more serious if mortality is depressed below a moderate level and fertility rates remain high.

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With the exception of Japan, a country that has completed its demographic transition, and some intermediate countries where birth rates are already declining, the majority of countries in the ECAFE region fall in the category of countries with high birth rates and moderate death rates. The demographic situation in the last group of countries is characterized by high dependency ratios, low *per capita* income, retarded economic development, and slow social advances in almost every field.

Rural Overpopulation

Japan is atypical for Asia in that it has already solved its problems of rural overpopulation. Following the Meiji Restoration, population pressure in the rural areas was one of the factors encouraging people to migrate to town but, as *per capita* incomes were rising, they were able to find jobs there. However, rural populations continued to increase until 1940, albeit at an ever decreasing rate, but fortunately it was possible to find jobs for them in agriculture. Thus, at the same time as total population was growing rapidly, Japan was able to build many new productive facilities, to change its industrial organization, to expand its foreign trade, and so on, and also to carry out a surprisingly rapid internal social transformation towards modernization.

Taeuber (1964) described Japan's experience : "Japan's past is the irrigated rice culture, the pervasive familism, the unending toil, and the generally quiescent acceptance of the East. Japan's present is the metropolitan vortex, the restless striving, the personal ambition, and the material thrust of the affluent society" (p. 215).

In most other Asian countries, however, continued population growth has almost everywhere resulted in rural overpopulation, that has led, in turn, to a diminution of landownership, to an increasing number of landless, and to an incipient decline in productivity *per capita* and thus to a tendency towards mass impoverishment. Any social organization adjusts itself to the growing numbers, but the social gap between the rich and poor is widening (Willner, 1957, p. 232), working hours get shorter, a new pattern of client—patron relationships is emerging and people come to be paid less for their labour. In time, the mode of production becomes more labour intensive: the number of work animals used declines and they are replaced by people in production. It can even lead to what Geertz (1963) has called agricultural involution, a situation characterized by an overelaboration of labour-intensive methods.

Some Aspects of Urbanization

Urban areas provide social, economic and recreational improvements for many of their inhabitants, but a large proportion of urban dwellers in Asia today are facing social problems similar to those faced by the many who live in the overpopulated rural villages. Urban growth in many parts of Asia has not resulted from the favourable pull factors, such as ample emploment opportunities, but rather from push factors, such as unemployment and poverty, and, sometimes, lack of physical security (Hauser, 1957, p. 33). The physical and the social settings of many Asian urban centres attest to the relatively greater strength of the push factors: the problem of unemployment and underemployment that has come to characterize the village economy spreads to the urban centres; and the tendency towards labour-intensive methods is appearing, in the form of too many rickshaw-drivers, pedlars and so on. In the absence of adequate social provision for the unemployed, urban life can be very difficult for many, just as it was in the overpopulated villages they felt force to leave. The social circumstances in which the poor urban people find themselves tend, moreover, to perpetuate, or reinforce, traditional values of mutual help, "shared poverty", etc. in the urban setting (Wertheim, 1964, p. 172).

Urbanization of this sort is common and is one of the reasons why an "urban way of life" similar to the West has not emerged in Asian urban areas, except among a small circle consisting of the urban elite and upper middle class. "Contrary to the traditional theory, we find in many Asian cities that society does not become secularized, the individual does not become isolated, nor do social relationships in the urban environment become personal, superficial, and utilitarian" (Bruner, 1961, p. 508). There are of course various other contributing factors, such as the nature of the culture, the size of the migrant group, the ethnic or racial composition of the town, and the distance to the village or community of origin. The slow rate of economic improvement for the many, and the difficulties facing the achievement of modern social security and "social control". However, all greatly impede the development of the constructive social changes that are needed.

It is the lack of basic changes in social conditions and in the way of life for most, when they migrate from the countryside to the town, that explains why there are negligible differences in marital fertility between rural and urban dwellers. A special report of the 1951 Census of India gives the following averages of live births for still-married women at age 45 or over, for urban and rural women respectively: 6.4 and 6.6 in Travancore-Cochin; 6.3 and 6.1 in eastern Madhya Pradesh; 6.4 and 6.6 in other regions of Madhya Pradesh; and 6.7 and 6.2 in other regions of India. The survey of Poona district done by the Gokhale Institute also shows that the level of fertility is not related in any clear-cut way to place of residence, whether rural or urban (Driver, 1963, p. 7-8).

Fertility Control as an Aspect of Social Change

A growing number of countries in the ECAFE region are developing family planning programmes in order to curb excessive fertility and thus to encourage over-all economic development. Deliberate efforts by voluntary and governmental bodies to promote fertility reduction are becoming more and more important as a medium of social change in developing countries.

Japan is the only country in the region that so far has completed its demographic transition. Between 1947 and 1957, it experienced an unprecedented fall in its crude birth rate, from 34.3 to 17.2. Fertility is also declining in the Republic of Korea, Singapore, Sri Lanka (Ceylon) and Malaysia, all of them areas where social and economic improvements are well under way. There are strong reasons to suspect that China is also experiencing a fertility decline, but statistical data on the matter are hard to find.

One country in the region, the Philippines, is above average in terms of social development, modernization and income *per capita*, but it has not yet experienced any reduction in fertility level. Rather, the health and social improvements seem to have resulted in a rise in the level of fertility. Now that its Government has deliberately adopted a family planning programme, the development and achievements of the Philippines in the immediate future will no doubt command the closest attention of planners and social scientists in other parts of Asia.

Those who consider that social and economic improvements are basic prerequisites for the wide acceptance of family planning are wondering whether, in such countries as India, Pakistan and Indonesia, in view of their social problems and economic retardation, one can expect much from their family planning programmes. They are asking whether, in the absence of drastic social change in terms of schooling, secularization of outlook, etc., such programmes can have any significant effect on the rate of reduction of marital fertility in the next few decades. They are also asking: Can the small family norm be transplanted and implemented through a massive family planning programme before there is a notable change in the customary way of life? Can such a programme succeed when the ideal family size is, as shown by a number of KAP surveys, still four to six children? ("Excerpts," 1969, p. 235; Concepcion, 1971, p. 86). Can fertility be reduced outsite a well-designed motivation programme? There is no simple answer to these important and interrelated questions; and it is undoubtedly optimism that is the main fàctor behind the existence and operation of such programmes.

On the other hand, a number of observers have come to doubt whether family planning programmes have been as important as is generally believed in the countries where fertility has already begun to decline. In the Republic of Korea, for example, induced abortion has been playing a major role, and the IUCD (over a million insertions) seems to have had largely a "substitutive effect" on fertility (Kirk, 1969. p. 89 - 90; Raulet, 1970, p. 230). Japan, too, has deviated from a conventional family planning programme, in the sense that the major method has been induced abortion and not modern contraceptives during the critical period of its demographic transition in particular (1947 - 1957).

What has been said here concerning the likely success of family planning programmes in low-income countries is rather pessimistic. According to Bogue (1971) this pessimism is justified and is due to the inadequacy of the approach based on traditional demography, which was, he said, ecological and anthropological, with the main emphasis on culture, living standards, educational attainment, occupational distribution, modernization and urbanization as the major determinants of birth rates. "In contrast, the new field of family planning research and experimentation is more psychological and sociological in its orientation. It places great emphasis upon attitudes, motives, group leadership, interpersonal influence, and other variables which are subject to more ready manipulation by experimentation" (p. 237). Bogue is of the opinion that resistance to family planning is only minor among the masses in developing countries and that privation is a powerful force for fertility control.

This new approach is encouraging. There are indeed reasons to doubt whether living standards, the educational level and a person's occupation are the prime determinants of birth rates and of the willingness to accept modern family planning practices. But again, the problem is perhaps much more complex than it seems to many optimistic observers. Such family planning programmes are, due to the nature of the approach, also likely to have differential impacts on the various groups in the society. For example, people's awareness of and their willingness to visit family planning clinics is greatly determined by their residence and income and the effectiveness of family planning propaganda.

The family planning approach in the developing countries tends to be highly clinical, with a strong technological emphasis. For effective implementation, such a programme requires adequate medical facilities in terms of both materials and trained personnel. It might therefore be necessary for the people to have already become "clinic minded", because periodical checkups for pill and IUCD acceptors, re-insertions, etc., will be needed. Unfortunately, medical facilities in low-income countries are far from satisfactory and are unlikely to improve much in the next ten years. A large proportion of the population are still far from being clinic-minded due to social and economic reasons and, sometimes, to lack of access to clinics.[1]

An even more crucial point is "just what is family planning?". There seems to be a belief that people in the low-income countries have to be taught about the concept of fertility control, whereas they have long known what it is and have practised it. Himes (1963) has written: "Contraception....has been refined, improved as a body of knowledge, but as a practice it is not new" (p. 422). Even many of the experts appear to believe that family planning is being achieved only when modern contraceptives come to be used. The following illustrates the general approach of many family planning programmes and their excessive emphasis on (new) technology: "Ask about the loop" is what we have been saying through every available channel of communication since this device was introduced a year ago. Our aim is to make the loop a respected household word and its shape familiar to married couples through exhibiting the real article at every opportunity and by imprinting its image on about everything we distribute to our target group. In brief, the loop is the focal point of all of our promotional activities. (Hartman, 1966, p. 350).

Customary fertility control practices, like prolonged abstinence, coitus interruptus, and others, are ignored or even discouraged. When the nature and the extent of the customary methods of fertility control are not known, it is not possible to devise a modern programme that will be able to take into account the congruence between the methods being recommended and those that have long been found acceptable, and used, in any given culture. Field research in Java (1969-1970) has shown that the period of abstinence after delivery ranges between one and two and a half years, and is very widely practised indeed. Writing on the same point Pardoko (Gille and Pardoko, 1966) has said, for east Java, that "more than one-fourth of the married women under age 40 stated an interval of 6 to 11 months and nearly half of them 12 to 23 months. Around 4 per cent stated even 24 months or more" (p. 520). By contrast, research in the Karo Batak region of north Sumatra indicated that the most popular method by far was coitus interruptus. In both places, induced abortion was practised, but it was more common among the Karo Batak.

These differences in customary practices have some important implications for family planning programmes, and it was possible to test these by experiment. The people in Java showed that they were more receptive to the rhythm method than to the condom, whereas the reverse was true among the Karo Batak. "Experiments" were limited in scope, but it is felt that it is safe to conclude that in a modern family planning programme it would be well worth-while to recommend the practice of simple methods, such as coitus interruptus, rhythm, and the condom, particularly in areas not yet served by clinics. It is realized that the rhythm method is not much favoured by planners, in particular since its failure in India. But it could have a place in a society where abstinence is already widely understood and practised (as in Java) and that it will likely be quite effective if it is explained in a way that "fits" with the local culture.[2]

It is also concluded from these studies that it would seem to be very worth-while to combine the recommendation of simple methods, such as coitus interruptus, with measures designed to increase motivation to practise family limitation. Such a programme would require a less elaborate infrastructure and less money than the modern clinical approach and would be a most useful supplement.

The history of family planning in England, France and the United States shows that, in the last century, the most commonly used methods were simple methods, methods that were effective because they were accompanied by a determination to reduce birth rates. The literature (van de Walle and Knodel, 1967) also shows that there appears to be little in the statistical record for Europe which confirms the existence of an association between the beginning of the fertility decline and any specific level, or threshold, of economic and social development. Points such as these should also be taken into account in designing family planning programmes in low-income countries.

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[1] To the surprise of scientists and planners, a recent survey in Indonesia indicated that the people of Djakarta are not yet clinic-minded. About 80 per cent of deliveries are attended by traditional midwives (Dinas, 1970). This is due to the cultural back-ground of the majority, but another major inhibiting factor seems to be that modern medical services are costly relative to income.

Thanks to its progressive leaders, both at the top and at intermediate levels, Djakarta has been able to launch one of the most vigorous family planning campaigns in Indonesia. It was initiated in April 1967. With the attainment of two mobile clinics and one hundred family planning clinics by the end of 1970, the expansion of the number of clinics can be said to be impressive. However, clinic attendance and family planning acceptance is much lower than one might expect. It has achieved 25,645 acceptors or 85.5 per cent of the 30,000 target for the 1970-1971 period, which roughly means 2.7 acceptors per clinic per day of operation or 22.5 acceptors per clinic per month (Djakarta Family Planning Project, 1970, 1971). It is too early to make a definite assessment of likely further developments, but there seems to be no doubt that clinic-mindedness and income go together and are the major determinants of the willingness to accept modern contraceptive devices *through clinics*.

[2] Two "simplified rhythm systems" were devised: one using the Javanese calendar, and the second based on the seven-day week. It looks as if both will be more effective than the bead system used in India.

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18. SOME PROBLEMS OF DATA AND MEASUREMENT IN PLANNING FOR SOCIAL DEVELOPMENT*

I. INTRODUCTION: SOCIAL STATISTICS AND SOCIAL SURVEY DATA

Whereas the importance of economic data and of population statistics for development planning was recognized at a very early date, the relevance of social factors of development became part of national as well as United Nations concern only at a much later date.[1] Consequently, the state of data collection as well as conceptualization for measurement of social development is much less developed than in the economic or demographic fields. This is particularly true for most countries in the ECAFE region.

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[1] A detailed report on this was prepared recently : see Bunnag, Jane, "Evolution of the United Nations and ECAFE policy on social development" (ECAFE, February 1971).

The still insufficient supply of social statistics collected by government agencies is repeated in the field of case studies and social surveys conducted by individual social scientists. A bibliography on social surveys carried out in developing countries between about 1945 and 1967, ranked the ECAFE countries as shown in table 39.

Table 39.

Results of surveys on social change in major world regions published in English language journals until 1967

Region	No. of publications	Percentage
East Asia	228	13.1
Southeast Asia	92	5.3
South Asia	703	40.4
Africa	193	11.1
Caribbean	98	5.6
Latin America	212	12.2
Middle East	214	12.3
Total	1,740	100.0

Source : Frey, Frederick W., *Survey Research on Comparative Social Change : A Bibliography* (Cambridge, Mass., The M.I.T. Press, 1969). (Note: some items are double-listed).

This bibliography is concentrated on studies based on sample surveys and provides the most complete collection of studies in English available so far. Considering the wide variety of topics covered and the number of societies involved, the number of studies may be considered small. On the other hand a fair number of studies are available, especially on India, that could be used as social planning data.

The intensive case studies and social surveys available are of differing quality and usefulness for social planning. Most of them tend, however, to provide more detailed and more reliable data than nation-wide statistics. Unfortunately reports on national or regional social statistics hardly ever refer to non-government social survey data or case studies nor do individual social scientists attempt to relate their findings to macro-data. Publications by anthropologists, sociologists and, to some degree, political scientists do not usually cite the more specialized government statistics or the wide range of United Nations reports. A more intense co-operation would improve the data base for social development. A further problem is that many studies in the ECAFE region have been commissioned by foreign government agencies who have insisted that the results remain classified. Essential data are thus withheld from international agencies and national Governments that could assist them in their social planning efforts.

II. GENERAL PROBLEMS OF DATA COLLECTION AND MEASUREMENT

Measuring Planning Goals

Depite recent criticism, economic growth, measured in *per capita* income, is still regarded as the overriding goal in national planning. No such over-all and generally recognized goal exists in social planning. Social development goals are usually described in fairly general terms: social justice, equal opportunities, a socialist society, and the like. In order to develop yardsticks to measure social development, both general criteria and specific goals have to be defined. The major problem appears to be that development plans differ widely, not only in the emphasis placed on social aspects of development but also in the definition of social development goals.

An attempt should be made, therefore, to measure development goals. This could be done on three levels concurrently :

1. On the economic level by comparing budgeted expenditures on socially relevant expenditures. Here an over-all standardized measure might be adopted. A decision on what items should be included in such a measure (e.g. planned expenditure on social welfare or health and education as percentage of the GNP) depends, however, partly on the other two levels.
2. A systematic, descriptive account of development goals. A rank order of goals could be attempted.
3. An attempt to quantify qualitative statements of social planning goals. Methods similar to content analysis could possible be employed.

Measuring Social Development: Social Indicators

As outlined above, social development can only be measured in relation to stated goals. In very general terms such a basic goal was formulated at a meeting of United Nations experts.[2] Social development is to "generate favourable changes in levels of living, interpreted in the broad sense as related to accepted social values and a better distribution of income, wealth and opportunities."

Based on this general goal as well as probably on considerations related to the availability of data, the United Nations Research Institute for Social Development (UNRISD) attempted to construct a measure of social development, made up of social, demographic and economic indicators (see annex). It appears to be necessary to re-evaluate these indicators and to clarify what data have to be collected in the ECAFE region for use as social development indicators. The following critical remarks, made by an Expert Group on Social Development should be taken into consideration.[3]

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[2] "The role of soical factors in development", Meeting of Experts on Social Policy and Planning, Stockholm, September 1969, background paper No. 3.

The UNRISD indicators:

1. Do not take into account the geographical and natural resource situation;
2. Have not been tested over different periods of time for consistency;
3. Give only the existing relationships that have been reached, but do not relate these results to either formerly existing states of affairs nor planning goals;
4. Do not take the very important distributional aspects into account;
5. Measure in some instances the availability of facilities rather than their use;
6. Are biased by the availability of data to stress quantitative rather than qualitative aspects of social development;
7. Are not complete: important fields are not tapped.

Brief consideration of the interrelation between population change and social development, the impact of international relations on population change and social development, and the measurement of the administrative capacity for implementing social goals will illustrate some selected problems connected with data collection and measurement of social development.

Data on the Interrelation Between Population Change and Social Development

The rapid change of demographic characteristics in most countries of the ECAFE region is generally recognized as having a profound impact on social development. It seems therefore to be necessary to tag social indicators to demographic ones. Considerable time should be spent to work out what demographic data should be combined with what social indicators. The simple method of keeping population constant (indicator times *per capita*) is not sufficient.

Another problem is related to the fact that available indicators are static ones measuring structures rather than change. The development of new change-related concepts and indicators and the use of time series and change indices should be contemplated.

Feedback effects between population change and social development are often stressed but usually not measured. An obvious example would be the impact of social planning (in this case, birth control) on population growth and the impact of population change on planning (in this case, perhaps educational planning). Simplified cybernetic models rather than isolated indicators might have to be employed on an extended scale.

Impact of International Relations on Population Change and Social Development

The importance of international migration for population change is too well known to warrant any further elaboration. Data collection on international migration is, in the ECAFE region, not sufficiently developed, especially those characteristics of migrants that are essential for social planning and include education, occupation, and family status.

Another more qualitative aspect of international migration is the social impact of often short-term population movements. In this respect, systematic data on the social effect of tourists, foreign military personnel and foreign businessmen should be made available to complement the purely monetary aspects emphasized so far. Steeply rising rents for housing due to the influx of foreign personnel and the concomitant reduction of living space, rising of the cost of living, and decline of levels of living among sections of the local urban population, provide just one example. More prostitution and increased drug addiction, together with other functionally more specific activities of foreign military personnel, demonstrate the need for data collection in this field. On a more extended scale, the *social* effects of foreign investment and foreign aid should be measured.

Measuring the Administrative Capacity for Implementing Social Planning Goals

The question of implementing social planning goals is beyond the scope of this paper. Measurement of the capacity of administrations is, however, an important problem that seems to have attracted little attention of development planners despite the wealth of theoretical writings. The development of feasible indicators of administrative capacity on a regional basis should be taken into consideration. Such indicators would help to overcome the static bias of formerly employed social indicators in so far as they would help to relate achieved levels of social developments to perceived goals and the possibility of their implementation.

III. SECTORAL DATA

More specific problems of data collection and measurement in various sectors, from population statistics to other fields of social development, have to be discussed in the specific context of these sectors. This discussion therefore concludes by listing several aspects that appear to be common to many sectors of social development and planning :

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[3] "A review of integration of social aspects in development planning in the ECAFE region" (ECAFE/170, 15 March 1971), para. 58.

1. **Quality of data:** This is often related to a point discussed above, namely administrative capacity. Every effort should be made to improve the quality of data; meanwhile social planners should be aware that most statistical data have an undetermined error margin that, quite often, probably goes far beyond any acceptable percentage.

2. **Types of data collected:** Many of the standard classifications of statistical data were developed in industrial societies and might not provide the type of information necessary for social planning in Asian societies. Two examples: the definition of "family" and "household" is very complicated in Asian societies; underemploment is very important but cannot be measured by standard labour statistics.

3. **Neglect of distribucion data:** In most sectoral data series, the distribution of social phenomena is provided only on a geographical (administrative) basis. As many measures in social policy are directed at a better distribution of social services and common goods, the collection of data to measure this change in distribution (by income group or occupational group, for instance) becomes imperative.

4. **Change in data collection techniques:** the introduction of computers for statistical data analysis makes it much more feasible to produce correlations not previously available. Social planners should be aware of these new possibilities and should develop more sophisticated schemes of data aggregation and correlation.

In this discussion, several specific aspects of data collection and measurement have been presented that are specifically related to over all social development. However, the various sectors of social development, such as education, welfare, civil rights, and reduction of income inequalities, remain the main fields where concrete problems of data collection and measurement will have to be solved. These generally more technical consideration should, not however, deter the experts' attention from some of the more basic questions presented in this paper, which was intended as a provocation to stimulate discussion rather than as an overview of accomplishments.

Annex

LIST OF INDICATORS (UNRISD)

SOCIAL AND DEMOGRAPHIC

Health and Demographic

Developmental	Structural
Infant mortality rate	Crude birth rate
Expectation of life at birth	Gross reproduction rate
Crude death rate	Dependency ratio (children aged under 15 plus persons aged 65 and over as a percentage of age group 15-64)
Death rate due to infectious and parasitic diseases, per hundred thousand population	Child dependency ratio (children aged under 15 as a percentage of age group 15-64)
Inhabitants per physician	Population aged 15 and over as a percentage of total population
Inhabitants per hospital bed	Population in localities of 20,000 and over as a percentage of total population
	Population in localities of 500,000 and over as a percentage of total population
	Population in localities of 100,000 and over as a percentage of population in localities of 20,000 and over
	Average size of private households
	Population density (persons per square kilometre)
	Proportional mortality ratio

Nutrition

Developmental	Structural
Calorie consumption, *per capita*, per day	Consumption of calories derived from cereals and starchy roots as a percentage of total calorie consumption
Protein consumption, *per capita*, per day	
Consumption of animal protein, *per capita*, per day	

SOCIAL AND DEMOGRAPHIC (Continued)

Education

Developmental	Structural
Literate as a percentage of total population (age group 15 and over)	Female enrolment as a percentage of primary enrolment
Combined primary and secondary enrolment as a percentage of age group 5-19	Pupil/teacher ratio in primary education.
Primary enrolment as a percentage of age group 5-14	
Secondary enrolment as a percentage of age group 15-19	
Higher education enrolment per thousand in ages 20-29	
Vocational enrolment as a percentage of age group 15-19	
Percent of age group 15 and over with *at least* one year of : (i) Primary school education; (ii) Secondary school education; (iii) Higher education.	

Housing

Developmental	Structural
Average number of persons per room	
Dwellings with piped water as a percentage of all dwellings	
Dwellings with electricity as a percentage of all dwellings	

Communications

Developmental	Structural
Newspaper ("daily general interest") circulation per thousand population	
Telephones per hundred thousand population	
Radio receivers per thousand population	
Television receivers per thousand population	
Radio *and* television receivers per thousand population	

ECONOMIC

Transport and Services

Developmental	Structural
Railway net-ton kilometres *per capita*	Percentage of economically active population in :
Railway net-ton kilometres per square kilometre (size of country)	(i) Electricity, gas water, sanitary services, transport, storage and communications (ISIC divisions 5, 7);
Passenger railway kilometres *per capita*	(ii) Electricity, gas, water and sanitary services (ISIC division 5);
Passenger railway kilometres per square kilometre (size of country)	(iii) Transport, storage and communications (ISIC division 7).
Motor vehicles per thousand population	

Developmental	Structural
ECONOMIC (continued)	
Agriculture	
Agricultural production per male agricultural worker (ISIC division 0), in 1960 US dollars	Adult *male* labour in agriculture as a percentage of total *male* labour (ISIC division 0)
Industry	
Electricity consumption, kilowatt hour *per capita*	GDP derived from industry (manufacturing and mining, ISIC divisions 1 to 3) as a percentage of total GDP
Steel consumption, kilogramme *per capita*	Percentage of economically active population in manufacturing (ISIC divisions 2 to 3)
Energy consumption kilogramme of coal-equivalent *per capita*	GDP derived from manufacturing (ISIC divisions 2 to 3) as a percentage of total GDP
Trade	
Exports, in 1960 US dollars, *per capita*	Concentration of exports (exports of largest single item in terms of single digit SITC codes, as a percentage of total exports)
Foreign trade (sum of imports and exports) *per capita* in 1960 US dollars	Export concentration index[a]
	Exports of manufactures (SITC codes 5 to 8) as a percentage of total exports
	Exports of raw materials (SITC codes 0,1,2,4) as a percentage of total exports
	Exports as a percentage of GNP
	Imports as a percentage of GNP
	Foreign trade (sum of imports and exports) as a percentage of GNP
	Terms of trade, average 1950-1960
	Terms of trade, average 1955-1960
General	
GNP *per capita* (1959/61), in 1960 US dollars—official exchange rate	Salaried and wage earners as a percentage of total economically active population
GNP *per capita* (1959/61), in 1960 US dollars—parity rate	Savings as a percentage of national income
Investment per economically active person, annual average 1950-1960, in 1960 US dollars	Total structural differential in production[b]
	GNP concentration index[c]
	Labour concentration index[c]
	Government consumption expenditure as a percentage of GNP
	Private consumption expenditure as a percentage of GNP
	Expenditure on food as a percentage of total private consumption expenditure

Developmental	Structural

ECONOMIC (Continued)

Growth Rates (average annual, per cent)
GNP, 1950/52-1959/61
GDP, 1950/52-1959/61
GDP, 1958-1963
GDP, 1960-1965
GNP, *per capita*, 1950-1960
GDP, *per capita*, adjusted in terms of age, 1950-1960
GDP, *per capita*, 1958-1963
GDP, *per capita*, 1960-1965
Population, 1950-1960
Population, 1960-1965

Typological

Area
Population
Agricultural as a percentage of total area
Climatology (Koppen's classification)

[a] This index is determined by assuming an equal distribution in the three sectors (raw materials, manufactured products and "others"—SITC codes 0-2 and 4; 5-8; 3 and 9 respectively) and then computing three times the sum of squares of differences between the actual value and the value given by equal distribution in each sector.

[b] This index is the sum of the values (irrespective of sign) of the differences between the percentage distribution of GNP in each sector (agriculture, industry and 'others'—ISIC divisions 0, 1-3 and 4-9 respectively) and the percentage distribution of the economically active population in the same sector.

[c] These indices are determined by assuming an equal distribution in the three sectors (agriculture, industry and 'others'—ISIC divisions O, 1-3, and 4-9 respectively) and then computing three times the sum of squares of differences between actual value and the value given by equal distribution in each sector.

Source : United Nations Research Institute for Social Development, *Research Notes: A Review of Recent and Current Studies Conducted at the Institute*, No. 1 (UNRISD/68/C.22), pp. 4-7.

19. DATA REQUIREMENTS FOR UNIFIED DEVELOPMENT PLANNING*

Systematic survey and annotation of data for unified planning at the national level, with particular reference to social components of development in the ECAFE region.

I. THE UNIFIED APPROACH: An Introduction

A unified approach to development planning presupposes a unitary view of the total developmental process, i.e. a consciousness of the conceptual and empirical interrelatedness of all aspects of human life. This holistic view, that society and human activities constitute a single "social" system, is not a novel idea; but, due to increasing complexities and pressures of life, such a systematic approach has become increasingly difficult. Academic disciplines have meanwhile become increasingly specialized, dealing with ever more minute aspects of human life and thereby losing track of the integrative aspects of the single problem of development. The same observation applies to a Government's approach to its own society, which has become fragmented into sectors that parallel the various branches or departments of Government, which are often quite unco-ordinated.

During the First United Nations Development Decade, it became abundantly clear that sectoral approaches to development can create serious imbalances. One-sided emphasis on economic growth has often increased the misery of the masses while benefitting a few. Excessive investments in capital-intensive industry or in education have created vast numbers of educated unemployed. Dynamic health programmes have often reduced mortality. Lagging sectors of national economy have increased hunger and malnutrition. Inadequate attention to family planning has resulted in unmanageable growth of population which, in turn, dissipates the results of development. A whole score of social problems has followed in the wake of such lop-sided development, often destroying the old and traditional patterns of life without substituting or even holding out the promise of a new or improved style of life.

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*By the Social Development Division, ECAFE.

A unified approach to development planning seeks to remedy this situation by treating society as an integrated organic system and by recognizing that an activity in one sector will have corresponding influences on other sectors as well as on the whole.

Similarly, in administrative terminology, unified development can mean an integrated and co-ordinated approach to the processes of plan implementation by the different branches of Government. However, the theory of integrated development has not yet advanced sufficiently to provide specific guidelines on cause/effect or input/output relationships. Much of the work therefore, has to be guided by insight, common sense and intimate knowledge of individual societal problems and situations. Societies are constituted differently. The developmental needs and priorities or even the social objectives of one country may be quite different from those of other developing countries. What is beneficial in one society, e.g. more emphasis on education, may be dysfunctional in another.

No valid universal formulas or models or sociometrics that can apply to all societies or all countries are possible with the present state of knowledge. Emphasis must therefore rest on a *diagnosis* of each country's over-all planned objectives; relating those to the actual national plans and determining whether the plans are adequately conceived to achieve those objectives. If not, the gaps or the overlooked factors of direct or indirect impact and interrelationship that, if adequately treated, may expedite the achievement of objectives must be identified. This paper can only contribute to an increased awareness of the general interrelatedness of several important social phenomena that could lead to a proper social diagnosis and an effective unified development approach. For this purpose, the discussion delineates and annotates some 16 main (grouped) interrelated planning areas from which a national planner must select those that are considered valid in each individual case and for which new data will need to be developed.[1]

The objectives of national development are generally given only in terms of some generalities, e.g. national self-sufficiency, economic growth with social justice, national integration, equality of opportunities, universal employment, eradication of mass poverty, and improved levels of living. The setting of developmental targets however is specific and depends on ideology, resources, trained manpower, local political context, etc. Further specificity is required in the setting of relative priorities and weighing of alternatives, economy of scale, time scale, gestation period, etc. Moreover, there are choices in the allocation of resources and in the policy and institutional instrumentalities to be used for plan implementation. The availability and understanding of new (social) data and the way in which these can be applied meaningfully to the planning system will advance the present frontiers of knowledge in national development.

Under such socio-economic variables, it is altogether difficult to define the concept or meaning of development. No society is static; a multitude of internal and external pressures exert their influence upon countries of the region, and all of them undergo varying degrees of socio-structural change. It is the purpose of planning to guide these changes into positive developmental factors and to accelerate development by which should be meant to "increase the opportunities of all people for a better life".[2] From this concept of development it becomes clear that not all changes nor every increase in production or GNP can be considered "development". It has often happened that countries have "developed", or rather grown, irrespective of the opportunities for a better life to the masses of their people. Should such lop-sided change be termed development? Positive development cannot and should not be analysed separately in social or economic components; as a unified process, development must involve a whole range of related data covering psychological, sociological, cultural, economic, political, administrative and environmental factors. For successful unified development planning, all these factors must be considered simultaneously and their interrelatedness needs to be understood.

It is the aim of the secretariat, in the ensuing annotation of these planning areas, to clarify the interrelatedness of these factors and to explore the new frontiers of the unified approach to development planning and analysis. While doing this, certain less conventional areas of planning activity will perhaps receive more emphasis than other areas, but it should be stated at the outset that, because of the mutually interrelated nature of these organic areas, a coherent reasoning that links the areas together will be possible, irrespective of what particular area one chooses as the point of departure. One of the guiding principles underlying the annotation is that the "motor" of development is "the modern man": the man who wants to master his physical and social environment rationally and scientifically through the power of his mind. The leadership and the cadres in any process of development will need to possess this modern or development-oriented attitude, in addition to an adequate measure of political and executive power, in order to exert their will and achieve a dynamic level of development as the take off point for self-sustaining growth and improved levels of living. The emphasis is on the non-economic aspects of development, such as the psychological, sociological and cultural aspects and their interdependency on economic, political, administrative and environmental aspects. It is not intended, however, to serve as a new theory of development, nor as an attempt to create any development models.

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[1] The interrelatedness of planning areas is emphasized in many recent reports. See for example: Report of the Joint ECAFE/ILO Regional Seminar on Interrelation between Population and Manpower Problems (E/CN.11/L.317, December 1971); Report of the Working Group on Social Statistics (E/CN.11/L.314, October 1971), esp. paras. 94, 95; Report of the Conference of Asian Economic Planners (E/CN.11/1009, December 1971).

[2] United Nations General Assembly resolution 2626 (XXV), para. 18.

II. SOME AREAS OF PLANNING FOR UNIFIED DEVELOPMENT

Development planning is a design for an organized national effort to progress from the present socio-economic level to a desired future status of change with growth in all sectors of the polity. Its aim is to guide and accelerate existing developmental factors and to initiate new ones as necessary to achieve a better society with improved levels of living, i.e. a society that, in the context of Asian conditions, is developed instead of developing.

An Annotation of Unified Planning Areas

I. General data

The point of departure in any development planning must be a thorough knowledge of the current condition in the polity and in the society that is to be developed and then to chart the progress to the desired state, the contours of which should be equally clear. Available resources, development trends and the mechanisms possible for plan implementation should be carefully considered and alternatives carefully assessed, to lend to the planning process the necessary realism. Thus, budgetary, capital, manpower and natural resources and their location and availability over time, public and private sector activities and developments, the capacity of the civil service for plan implementation and the equally important popular co-operation and participation in development will all need a very careful assessment, and they must be weighed against anticipated feasibilities and constraints.

II. Demographic data

Demographic variables affect all areas of planning and development and should therefore be available in as much detail as possible. They should be broken down by urban and rural sectors and reflect trends in urbanization and migration. Census and population data are therefore of the utmost importance, but these should be complemented by data that reflect temporary population movements, such as tourists and military personnel, as well as geographical mobility, educational background, manpower qualifications, economic activities, income, living conditions, family composition, nutrition and health. It is only by such complete sets of data that problems and problem groups (e.g. the poor, the hill tribes, the castes) can be sufficiently identified and relative plan priorities determined. Demographic data should furthermore be gathered on a family or household basis, since these constitute the basic units of society and therefore the basic units for planning. Population data generally tend to be offered on the basis of enumeration of individuals and facilitate the calculation of *per capita* ratios, but it is often more functional and relevant for development planning to compute *per family* or *per household* ratios, as for example for income, employment and housing.

This *stocktaking of resources and of population* is basic to all planning activity. Planning aims at an improvement of the ratio of resources to population to improve levels of living and the quality of human life. To achieve this goal, action programmes should be formulated in all areas of planning activity (Sections III-XIV).

III. Production data

Production planning has until recently been in the forefront of most national planning exercises and has therefore generally been the preserve of the economist. But it has been increasingly realized that material production is greatly dependent on the human capability to produce. The same relationships are also being more closely revealed in other "economic" factors of development. This paper therefore focuses on the human or social aspects of production and other economic activity. Admittedly, this is an arbitrary bifurcation between economic and social aspects of production and other development activity, because, in unified development planning, production is directly related to employment and manpower, the structure and distribution of wages and income, productivity *per capita*, productivity per sector, alternative cost-benefit analyses between capital-intensive and labour-intensive activity, rates of savings and investment, etc., and all these and similar data are needed for manpower planning. Manpower planning involves education and health, and, since levels of living, education and health are closely related to mass poverty, which is a continuing infliction in most countries of this region, production planning must involve the priority planning for a reasonable income and minimal standards of social welfare for the masses, including cheap availability of basic consumption goods. Production not only generates more income, but its product also needs to be sold or consumed. Income will be spent, saved or invested according to current socio-economic patterns of living. Planning for the development of internal markets and local buying power thus needs an equal priority. Modern productive enterprises demand and create skills, stimulate modernized and urban styles of life, increase the demands on the systems of public utilities and communications, and even affect the social and physical environment. Whereas primary and secondary levels of production activity may be very limited in effecting "modernization", i.e. bringing about change in traditional attitudes of people (see discussion under **VI. Education**), modern tertiary production, namely the production of services, tends to be strongly modernizing. For example, foreign business and trade, shipping, tourism, airline and hotel services, radio, television, and the film industry exercise a great influence on social attitudes besides generating considerable income, and investments, and are growing at a very rapid rate. Tertiary production stimulates the emergence of a modern sector of society that is able to communicate in foreign languages and is subject to strong western cultural influences. This in turn stimulates demand for service-oriented education, often resulting in the neglect of the training demands of primary and secondary sectors of production.

Production planning in the Asian context will need to solve two urgent problems, namely the best use of scarce capital resources and the optimum use of abundant human resources. Industrialization *per se*, along the lines of more advanced western models of production, offers no ready solution to either of these two. In most countries of the region, national incomes originating in the agricultural sector are larger than those in the non-agricultural sector. The industrial sector is relatively small, as is the proportion of total labour force employed and the income generated by it. The capacity of the industrial sector to absorb a significant part of the total labour force (which itself is growing at 2 to 3 per cent annually) is extremely limited and will probably remain so for the next few decades. The bulk of the labour force must therefore remain dependent on agriculture, in which the product per head is traditionally lower than in the other sectors. A rise in the productivity of the agricultural sector is therefore absolutely essential for improving the over-all levels of living. Production planning should therefore concentrate more on bringing about labour-intensive agriculture through double cropping, crop diversification and introduction of high protein crops (and a corresponding change in nutritional habits); the creation of viable living conditions and communities in the countryside; the development of agro-industries and storing and marketing facilities; the modernization of home and village industries and standardization of home-craft products; and the gradual building of a viable socio-economic system among village communities, including specialization and economy of scale at the lower levels and markets at the higher levels. Promotion of tourism or basing of foreign armed personnel may furthermore serve to increase and improve the manufacture of traditional handicrafts and promote employment in the traditional sector. Production planning in the developing countries in the region should therefore aim initially at maximizing employment and achieving agricultural and agro-industrial self-sufficiency, rather than at increasing exports production, maximizing industrial profits, or establishing capital-intensive industries or works.

All this however should not mean that a developing country should neglect the development of a modern sector of industrial production, but a strong note of caution and balance in planning is called for. Technological changes will always cause output per unit of labour or capital employed to rise, and labour employed per unit of capital or output to fall. Thus it will be possible to increase output with less labour per unit; but then, total concentration on productivity alone will mean less employment and ultimately increase social costs and social instability and increase the disparities within the country. It should be clearly understood that it is the structure and pattern of production that dictates the pattern of distribution and consumption.

IV. Income distribution

Delineation of production's controlling role brings up the most vital development question, namely how income is to be distributed and mass poverty eradicated. Only an expanding medium technology and small-scale sector and/or suitable non-farm but widespread rural activities (for example, public works) in addition to structural changes (such as land reform) and an expanded sector of agro-industries producing basic consumptive goods can solve this problem. Productivity as well as employment in these areas will have to be improved in order to raise the levels of living of the vast majority of the people and provide them with any elements of social security and public services.

An adequate level of employment and income opportunities that can ensure a recognized minimum national standard of consumption and a universal access to a minimum of public or social services for all people is the *sine qua non* and *raison d'être* for all planning. These minimum standards define and constitute a level of the poverty line that should be maintained by any means, and they therefore constitute one of the main parameters for national development planning. Access to adequate income and services is, apart from the immediate considerations of social justice, also an essential element to evoke popular participation in implementing the plans, in over-all nation-building and in development. People who do not derive a measure of social justice and self-respect from the society in which they live cannot owe allegiance to that society or be expected to make any positive contributions to the development of that society. They may even be led through desperation to break up that society through non-constitutional or violent means. Moreover, the fulfilment of minimum standards of consumption and services is in itself a strong developmental factor because a community that is educated and commands skills, is well-fed and healthy, is employed and receives a fair share of developmental benefits will also ensure a measure of political and socio-economic stability and security. Its members are intrinsically motivated to work harder and produce more than the individual who is poverty-stricken, undernourished, unhealthy, underemployed, uneducated and insecure: a phenomenon not too uncommon in some countries of the region.

V. Employment

Thus, employment appears to be the pivotal area on which development planning activities should converge. A man who is gainfully employed will contribute to society, while at the same time providing for his family, and will enjoy a measure of self-respect, satisfaction, security and stability. Unemployment or underemployment means heavy social costs, loss of productivity and waste of valuable human resource; unemployment can jeopardize political stability and the entire social structure. Production, development and the quality of life are thus ultimately dependent upon employment and upon the quality and the activity of the working force. In employment and manpower planning, all these crucial interrelationships must be considered, and social cost-benefits must be as carefully weighed as economic cost-benefits.

VI. Education, skills and social mobility

In some ways, development planning reflects a collective or national effort for increasing human mastery over the physical environment and a conviction that, if man has the will, the commitment and the instrumentalities to employ such mastery, total development is possible. Modernization as an attitude, process or instrumentality therefore presupposes: (*a*) an intense interest primarily in the material environment, (*b*) the intelligent and verifiable human understanding of that environment, and (*c*) the national will and ability to continuously increase human mastery over that environment through the motivation of achievement. This attitude, when shared by a sufficiently large number of people in a society, is the very roots of a development process that is self-sustaining.

Thus, modernization and development demand a concerted national effort in the field of education, in the promotion of skills and in the stimulation of large-scale social mobility. Education is viewed here in its formal and informal aspects, nothing that man learns from infancy to old age and that, if basic or traditional attitudes need to be changed, purposeful education will have to start at the time when basic attitudes towards nature and society tend to be formed, i.e. during early infancy. What happens during the first few years of life determines to a large extent whether a person will ever become a modern man, i.e. a vehicle for development, or forever remain a self-abandoned prey to karma. Consequently, it is imperative that, apart from all the traditional shorter term areas of technical concern, any development planning must give due attention to longer term programmes aimed at the nation's future citizens who must be stimulated to have sufficient motivation towards development.

A. Infants and B. Pre-schoolers

In this context, planning for the education of infants and pre-schoolers assumes great importance. Excessive maternal care, absence of challenging creative toys and objects, non-valorization of achievement behaviour (crawling, walking, talking, manipulation), and so on could contribute to fostering attitudes of dependency, disinterest in the understanding and manipulation of the material world, and non-achievement. The child's intelligence potential is also strongly affected by the nutritional level of the mother during pregnancy and of the child during his early years. Intelligence and will power to master situations is achieved by the challenges and obstacles put before the child, as well as by the supportive family-created environment in regard to role-taking, identification, valorization of behaviour, and the like. The stability of the family and the presence of an interested father have direct influence on character building, dependency needs and capacity for leadership, especially of the male child. These and similar observations therefore warrant active planning for the child and the family to foster creation of intelligence, interest in the material environment and achievement motivation, all of which are prerequisites to sustained development. Planning for the family as the basic unit of development in the over-all concept of national unified development planning is thus crucially important.

The problem must be approached in an integrated way that takes into consideration such factors as nutrition and health as well as toys, family income, its housing, its habits, its wider social and community environment, family planning, and marriage and divorce legislation.

C. School-age children and D. Adolescents

Formal education is also of great importance for the development of the young people to enable them to handle the responsibilities for the social and economic development of their families, communities and societies and to become productive and responsible citizens. Formal education can be as effective in achieving national pride as in ensuring national integration and stability, awareness of national problems, and participation in development. Developing countries have therefore often been advised to orient the quality and coverage of their primary education systems towards the actual needs of social and economic development rather than to continue the current lop-sided development of facilities for higher learning, which often turn out large numbers of dissatisfied educated unemployed.

Although literacy (three years of effective schooling) may open up a society from its feudal stagnancy, it is insufficient training for effective manpower development. Six years of schooling could perhaps provide a better command of arithmetic and its related aspects, thus developing the powers of analysis and abstraction and the ability to reason and distinguish between cause and effect. Secondary and higher education can provide effective cadres for leadership and channels for social mobility. Therefore, in addition to the conventional data used by educational planners, qualitative planning data now need to be developed and used.

Curriculum content has a direct bearing on development. Formal education in many developing countries is too academic, western, and white-collar oriented and has little bearing on the realities of life for the recently independent, ex-colonial member countries of the region. It often reinforces existing job prejudices and the abhorrence of manual work. This is a very strong anti-developmental factor. Rather, education should prepare students to master the realities of their environment and orient them towards taking pride in development with social justice rather than unrealistically aspiring to the achievement of western-oriented affluence and consumer-oriented habits.

Educational planning should prepare young citizens to fulfil functional roles and occupations by instilling in them practical knowledge and vocational capacities. The programmes that are designed for schools should be integrated with out-of-school education, literacy education, national extension programmes, in-service training and apprenticeship programmes. These should be dovetailed into long-term perspective national planning so that the right type of jobs await the right type of trained people when they complete their education over a span of 10 to 15 years. Neither can the training of girls and women as householders, mothers, educators and producers be neglected in view of the crucial importance of the family as a unit of development.

E. Social mobility

Formal education is probably the most important single factor promoting social mobility, and it is therefore relevant to know the composition of the student body at its various levels, in terms of social origin (father's profession), city, urban and rural origin, ethno-cultural origin, and in terms of sex. These data provide the planner with insights into the distribution of opportunity and privilege throughout the population, the reach of education, the relative wastage in manpower development, and the identification of groups that are kept outside the national education system and whose conscious participation in the process of nation-building must therefore be questionable.

VII. Family

The importance of planning for the family has been referred to earlier. It has been argued that the family is and ought to be a central element in the strategy for unified development planning. It is in and through the family that planners can gain access to true development. It is in and through the family that basic attitudes can be formed and influenced. Yet family planning programmes often show a remarkable neglect in planning for the development of the family. The conscious practive of family planning is more than the teaching of a technique. It should be designed to make people more conscious of their own power over personal and communal destiny: a consciousness that is implied in the modern attitude. The economic benefits of family planning can easily be demonstrated at the national level; but to be effective, benefits should be more realistically demonstrated at the level of the family itself. For an efficient programme of family planning, much anthropological data and an intimate knowledge about local customs and habits are necessary. It is believed that an all-out approach to the family, through intensive and sustained propaganda, can have a better chance of succeeding than any vague and general national slogans. Farmers and villagers are less conservative than they are generally held to be. To give them the knowledge and skills to contribute to national development through possibilities that exist nearer at home, i.e. the wife and the children, may stimulate both national consciousness and active participation. The intensive use of radio and television and other means of mass communication could create such awareness, knowledge and skills.

VIII. Housing

In some countries, traditional building patterns and domestic living habits are definitely unhealthy, and important improvements could be made at almost no cost at all. Advice and ingenuity should be stressed through the media of mass communication. No doubt the housing and hygiene requirements in rural areas differ greatly from those required for urban living; and yet, in urban areas, low-cost solutions for squatter settlements are feasible, for instance by ensuring that certain settlement areas are free of flooding, provided with minimum sewerage and water facilities, have a minimum road and communications system, and have fixed allocated compounds on which squatters are allowed to partially or wholly build their dwellings according to their own resources. Such programmes of slum improvement and resettlement require planning, control and guidance and call for effective urban community development and local leadership programmes. In rural areas, mass education could stimulate improved living habits with more windows, cleaner floors, space for children, etc.; improvements that relate more to a change in habits than to expenditure.

For urban low-cost solutions, it should be noted that:

1. Certain areas that are regarded as slums may in fact constitute good communities to live in and are amenable to improvements. Extensive urban resettlement schemes may not only be expensive but also have the tendency of breaking up communities and causing community disorganization. Neighbourhoods, whether slums or otherwise, tend to be homogeneous communities that are important assets for development planning. Slums are often a very useful half-way institution for promoting the rural migrant to the status of an urban dweller. Without this institution, any urban orientation may be difficult and harzardous. The future of the children, their environmental sanitation, and the security of family life should be the parameters for slum planning.

2. The rights, duties and obligations of squatters should be clarified, and a measure of legal security should be established.

3. Transportation, its cost in time and money, distance to place of work, etc., is often left out of the planning for settlements but increased transportation cost may defeat the very objective that slum clearance or resettlement schemes wish to promote.

The development of functional and satisfactory housing to meet indigenous conditions and available materials must be a priority and cannot be copied from foreign models. This calls for research and experimentation, especially in the urban setting, and the subsequent development of planning data.

IX. Health, nutrition and water

Planning for good health cannot be separated from nutrition, the family, housing, water, public services, income and employment. Nutritional habits affect intelligence; healthy people work and produce more; family planning heightens development consciousness. Since good health is the opposite of morbidity, planning should focus more on healthy living than on the control of disease and death. Access to health facilities, particularly the preventative aspects, appears to be more relevant than curative facilities *per se*. It should also be realized that a modernized public health service is extremely expensive and is more accessible to the urban rich. A less sophisticated but widely spread health service and the availability of good drugs and sound advice seems more in line with basic health needs, particularly those of the masses in the rural areas. Fighting cancer is hardly relevant in countries that have high infant mortality. If doctors cannot be trained in enough numbers and when so trained will not practise in the rural areas, then the only solution is the training of larger number of paramedics on the lines of the "barefoot doctors" of China. Doctors should furthermore be trained to cater for the real and functional health needs of their countries and not orient themselves on western, hospital-centered, expensive health services and practices.

X. Environment

A. Geographical

For the planning of specific indigenous development programmes, data specific to the territory will be needed on such items as erosion, water supply, forests, natural beauty, climate, spread of urbanization, industry, pollution, garbage disposal, land use, flood controls, consumption of fertilizer and pesticides, slums, transportation systems, population density, traffic congestion, parks, gardens and sports fields, availability of electricity, sanitation and sewage systems.

B. Social

Similarly, areas that appear to be important factors determining the social environment for planning purposes are population densities, noise, congestion and pollution, living habits, migration and urbanization, housing standards, incidence of mental illness and contagious disease, urban poverty and unemployment, incidence of crime and social stability, availability of services, and leisure and entertainment. Improvement of the social environment should be the basic aim of all planning activities, and environmental considerations therefore cut across most of the planning areas enumerated in this annotation and need no further elaboration at this stage.

XI. Social welfare and security

This planning area concerns the vulnerable persons and groups, underprivileged minorities, and security of household income. As such it is closely related to the distribution of income and benefits, employment, and the distribution of public services and opportunities to make use of these services. A guaranteed measure of social welfare and security of income could have wide-ranging effects on traditional social structures. In traditional systems, people depend on relatives and patrons rather than on impersonal legal or financial provisions and rights. Welfare and old-age security in traditional systems is provided by one's offspring and in the wider networks by community assistance. This condition provides strong motivation for having several children to rely on in old age and during times of hardship, while it often stands in the way of personal aggrandizement since the net results of labour tend to be consumed by the large number of dependants and relatives. Traditional security could be better ensured by improved health facilities and better survival rates of children, thus reducing the need for a large number of births. Fewer children might lead to a heavier investment in their education, thus increasing their capacity for earning a satisfactory income. In this sense then, health and schooling are also an investment in traditional security. On the other hand, guaranteed income under a modern or socialistic system would reduce the need to depend on offspring or relatives, could bring the birth rate down, and could reinforce the tendency to invest in education so as to produce a higher quality of offspring rather than a greater number. Social welfare and social (or income) security programmes must therefore be viewed in this developmental context; and, in the particular conditions of the developing countries of Asia (70 per cent rural), serious thoughts should be given to planning social security systems for the rural population. They may undermine the traditional systems of obligations and dependency, which in any case are fast disappearing because of extreme poverty, urban influences, and changing techniques of production, but they may stimulate attitudes and practices that free the individual from bonds of tradition while increasing his potential for innovative behaviour and social mobility.

XII. Social stability

Traditional societies tend to be comparatively more stable than modern societies where the dynamics of change, progress and development continuously generate and abet tensions. Societies in transition, particularly the urban societies in the rapidly developing countries, have moved away from the traditional *status quo* of stability without achieving any alternative social mechanisms for stability. Under this dynamic state of flux, social, cultural and economic institutions necessary to absorb and channel these tensions and conflicts are still undeveloped and should be purposefully built. It is the task of planners and politicians to keep abreast of the newly generating dynamics that accompany development and change. The prevailing types of social instability in the urban or urbanizing areas of the developing countries of the region reflect this condition of society and indicate some basic problems that need to be solved. The effects are now gradually pervading the strictly rural areas because of easy access to mass media, and such matters as unemployment and income disparities create fierce resentment. Agrarian unrest and revolutionary activities reflect these basic injustices in the distribution of national wealth and income emanating from traditional feudalism. Increasing pressure of population on the limited land resources, defects in the distributive system, seasonal crop failures, and excessive exploitation by landlords or money-lenders further heighten tension and conflict. High incidence of criminal behaviour, particularly in the urban areas, may be indicative of unemployment or the near impossibility of making ends meet under existing conditions. The causes of social unrest, violence and criminal behaviour are extremely varied and call for careful social diagnosis by the planners and policy makers. On the face of it, instability resulting from such social unrest and protests may appear to be anti-developmental, yet it may, under some circumstances (lacking proper institutions), be the channel to express a desire for change in conditions that have become unbearable and a cry for increasing social justice, employment opportunity, educational reforms, greater administrative efficiency with less corruption, popular participation in and sharing of development benefits and thus may define a new system of priorities for planning. Examples abound in the region. The repression of unrest by force may only aggravate the situation further and destroy the very desire for a meaningful and responsible participation in change and development, e.g. peasants pressing for tenurial reforms, protest movements of youth to improve the educational system, labour unrest for improving employment opportunities, the educated unemployed pressing for better correlation between higher education and employment opportunities. Thus there is need for research into the causes of social unrest, aimed at a more constructive approach in directing the energy of these movements towards developmental activities and ensuring a more meaningful participation in national life. Planning in this area calls for a bold and radical approach and may require an overhaul of existing socio-economic and even political structures and institutions.

XIII. Satisfaction and happiness

Planners should have a system of knowing how people think and feel about current developments and how they view the immediate future. Apart from all the other indirect measures to assess the state or progress of development, a more direct cross-section sounding of the population appears to be essential to anticipate and solve newly arising problems. Why are certain groups more satisfied than others? What are the causes of frustration and dissatisfaction? What are the most cherished objectives of the people? How do they react to the various developmental instrumentalities? Survey data on relevant groups within the population, such as youth, students, employees, entrepreneurs, civil servants, professionals, young married couples, older people, ethno-cultural groups, political groups and army officers, should therefore be gathered and analysed on a regular basis. Since people's happiness and satisfaction relates closely to all areas of planningand social life, these should be fed into the planning system. A direct sounding of the population, moreover, expresses the Government's interest and the people's partnership in the development effort.

XIV. Communications

A good system of communications is a productive national asset; in addition, it provides the means for geographical mobility and facilitates accessibility to goods and services as well as markets, and it supports a rapid emergence from traditional isolation. Modernizing societies are characterized by an improvement in communications that facilitate the circulation of money, goods and persons. Newspaper circulation, availability of telephones, post offices, radios, television sets, and the amount of mail moved are also indices of development in this category, and they all contribute to continuing development. Radio and television provide a singularly important channel of communication between the Government and its agencies of development and the population. Its use to ensure popular participation in planning and implementing development through systematic propaganda and extension, adult and out-of-school education has barely been exploited. It is to this aspect of communications that the planners urgently should turn. Efforts to educate and influence people should employ all available means of mass communication. National issues should be raised deliberatively, popular response and expression of needs and wishes openly invited, and then discussed futher in open forums through mass media programmes. As a two-way channel, the use of radio programmes especially should ensure a continuing dialogue between all the participants in development.

Capacity for Plan Implementation

XV. Popular participation

But, when all is said and done, planning by itself will not produce or change anything. It is the implementation of the plan, including the struggle with physical, socio-economic, administrative, and political realities, that counts and will ultimately deliver the goods. No Government can do it alone : it is crucial to ensure the participation of large sections of the population in development efforts. The questions are then: Are people involved? Are they motivated? Do they understand and are they willing to co-operate? Will they benefit? Do they know they will benefit? What are their relationships with and attitudes towards the civil service? Is the national school system geared to development and its propagation? Will people at large receive a fair share or will only some pockets be lined? Do the people have a say in the matter of decision-making and are their opinions accepted? Are there mechanisms and institutions to ensure their continuing participation? Is it recognized that development efforts should focus on the family as the unit of development, production and consumption? Is the motivation of youth and its full potential and enthusiasm geared to development? Development programmes should attempt to motivate all sections of the population and mobilize their energies and enthusiasm in the development process if the national effort means to succeed.

XVI. Government Administrative Capacity

One of the characteristics of developingcountries is a weakness of popular initiative or social demand that is so necessary to initiate and guide the development process. Initiative therefore continues to rest with the Governments and their planning and executive apparatus. That raises questions about the strength and continuity of political support (or political will) for development and planning and, arising therefrom, the capacity of the administrative system to enforce decisions, the adequacy of resources to support the development policy, the ultimate purpose and the quality of planning, and the co-ordination of efforts between different departments of the administrative apparatus.

Regarding the civil service, the questions often posed are: Is the civil service geared by its training and tradition to development, or has it been designed primarily to rule, to administer, to maintain law and order and to collect taxes? Are civil servants development-oriented or do they see themselves as a privileged class, divorced from the problems of the people? Is the civil service adequately staffed in terms of skills and numbers? Is their leadership and initiative appreciated, or are people basically suspicious of the government? Are there mechanisms and institutions at all levels for the people and the administration to sit togetherand discuss common problems and their solution? Are frontline workers (those in direct contact with the people) adequately trained, equipped and motivated for their tasks, and do they reflect the image of a development-oriented Government? Answers to these and related questions provide a basis for development planners to design programmes to reform the administrative cadre and system, through training and re-training to gear it to development, to co-ordinate different departments to the common objective of development, to create new institutions and decentralize and devolve power to such lower-level institutions, and to undertake other long-range programmes to educate and motivate civil service. Administrative constraints, such as red tape, corruption, and the attitudes of civil servants, have often been viewed as a strongly anti-developmental factor; improvement in this area should be considered as one of the targets for development planning.

III. UNIFIED DEVELOPMENT PLANNING IN THE ASIAN CONTEXT

Having briefly considered some of the more important areas involved in unified development planning and reviewing their interrelationships, it must be admitted that not all required data are available to the planner. The present status of statistical reporting in the developing countries is inadequate for the magnitude of this task. Furthermore, if such data were available, there would be an enormous problem in synthesizing, balancing and weighing data, opening up a vast array of choices, alternatives and possibilities and leading to much confusion and intensive computerization. Selectivity, priorities and national objectives must then be brought to bear to interleave these criteria much in the fashion of warp and woof in the weaving of a textile.

Realistic development can only be carried out within its own national socio-economic and political context, in which both the feasibilities and the available alternatives are carefully weighed. Planners should therefore be urged to have a clear picture of the future design of their own societies as required by the political decision-makers and other national objectives and to develop an incisive knowledge of the current state of socio-cultural and economic systems and structures, including the limitations and inhibitions thereof.

At present most development planning systems continue to derive their main inspiration and modalities from western theories of development, which are only relevant and meaningful to the peculiar historical growth of western and mostly capitalist societies. In doing so, "imported" ideals, models and methodologies are imposed upon societies whose problems, history, culture, socio-economic institutions and political background are totally different. It is therefore most unlikely that such foreign modalities can solve the problems of social development in the developing countries of Asia. It must be clearly realized that social development in the more advanced western countries is a factor of, and takes place through, an open-ended political process that is able to articulate, through political "lobbies", large corporations and other institutions, the strong social demands of an educated public with an inexhaustible desire for further emancipation, higher consumption and greater social justice. Moreover, at the time of their economic take-off these countries had ample resources in relation to population and colonial or open markets to absorb their expanding productivity. Thus the productive sector became increasingly characterized by high investment in capital goods, by *per capita* productivity, and capital-intensive technology. A further condition favourable to their growth was the prolonged period of peace from the Napoleonic wars until the First World War, a stability all too frequently missing in this region. It is thus very questionable whether valid planning methodologies for Asian conditions can be derived from such western experiences. Ready-made, handed-down standard lists of planning data or indicators of foreign origin seem to have very limited meaning in the Asian context.

It should also be realized that development in the more developed western countries has not followed one uniform path and that the socio-political milieu and organization or institutional patterns and systems of these developed countries also vary greatly from one country to another, one ideology to another, and, from time to time, within the same country. In the United States, free enterprise, competitiveness, individualism and free market forces predominate as the prime movers of development. This fits the historical picture of the United States as a nation. Development in the USSR took place through central planning and state implementation, emphasizing the development of heavy industry, full employment, self-reliant growth, controlled economic factors and shadow prices, interregional and intercountry harmonization and above all the maximizing of social welfare facilities and services and an even spreading of the benefits of development throughout the society, at the same time as increasing production and productivity rather than maximizing profits. In north-western Europe, the countries took up a role of taming the market forces of unhindered capitalism and directed resources to build up impressive welfare services. Japan's industrial development is corporate in nature and has succeeded marvellously. Developing socialist countries see the social framework as the prime determinant for economic growth,[3] and some of them have already achieved adequate minimun standards of living and public services for all levels of their society, with full employment and assured social security. Thus, traditional systems of indicators for development planning and for evaluating progress, which are largely derived from western economic growth models, do not appear to apply so intimately to the needs of Asian development planning. The narrow focus on planning limited to the indicators of economic growth during the First United Nations Development Decade, has brought to light that a 5 or 6 per cent annual economic growth rate does not by itself ensure an economic take off point or induce any over all social development. On the contrary, the First Development Decade witnessed a startling decline in social standards and levels of living despite the economic growth.

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[3] This view is evidently maintained by the present leadership of China, as implied by the dictum: "The changeover from individual to socialist, collective ownership in agriculture and handicrafts is bound to bring about a tremendous liberation of the productive forces. Thus, the social conditions are being created for a tremendous expansion of industrial and agricultural production." *Quotations from Chairman Mao Tse-Tung* (Peking Foreign Languages Press, 1962), p. 26. In the past, some other Chinese communist leaders have evidently held views much closer to the capital-investment theory of economic growth. The resulting clash of opinions played an important part in the events that led up to the Cultural Revolution: see Robinson, Joan, *The Cultural Revolution in China* (Harmondsworth, 1969).

Developing Asian countries therefore need Asian methodologies and Asian planning systems; and Asian planners need to think through their own special problems in a new and open-minded way in order to arrive at workable solutions within their own national resources. They need to look inward rather than outward. The broad areas of social aspects of development need more attention in both planning and implementation as well as in evaluating the progress of unified development. The more important of these aspects were discussed above and a linking of them is given in annex I. These are only a listing of the items that should be considered as a planner's framework, however, and more specific and selective data and indicators will need to be developed by the planners themselves within their own respective national-political framework, their planned objectives, available resources, priorities and proposed time-scale for set targets. Their general theoretical insights will then need to be translated into operational planning methodologies and into action programmes that directly respond to their targets and priorities.

The relevance of specific factors, literacy for instance, will vary from one developmental context to the other; the need for adequate housing is culturally and climatologically specific;the definition of a poverty-line and minimal standards of adequacy including consumption standards will depend both on resources and the structure and aspirations of the larger society. Developmental goals and priorities, as well as the choice of alternative solutions, mechanisms and institutions, will vary from country to country and even among different areas within the same country. Consequently, the need or scope for data and indicators will vary. The problem of data and data-gathering therefore needs to be solved in individual and specific contexts. Much basic and applied or experimental research needs to be initiated as a prerequisite for planning; and a thorough knowledge of the local realities and an adequate social diagnosis and well-tested assumptions will have to be established to provide planners with the necessary data and alternative tools. It is only at the more abstract levels of developmental theory that any general or universal data needs can be specified.

Planning is and always has been a dynamic process, catering for the realization of goals set by a polity. New data will continuingly have to be developed as the understanding of the country's specific developmental processes become better understood. Monolithic target planning can sometimes even have anti-developmental effects under the varying situations of the same country. There are of course certain types of data that can be standardized easily and be agreed upon as universally acceptable planning data. Demographic data are a case in point. But it has been clearly indicated that there is no one specific path to development, no one theory of development, no one outcome of development, and consequently no one list of indicators of development. Data must be developed that are hand-tailored to specific situations, conditions and goals. The theory of one standard list of indicators has proven to be dysfunctional and certainly not appropriate to helping solve Asian problems, the most startling of which is mass poverty in largely agrarian societies with large populations and limited cultivable lands. If the problem of mass poverty is not solved as the priority concern in the region, then, to a large extent, the planning systems currently under way will be futile, puerile and meaningless. They will only scratch the surface and further aggravate this problem.

Mass poverty can be assessed on the basis of a set standard of minimum income or on the basis of a nationally agreed minimum standard of consumption of basic goods and public services, which it should be the declared aim of the state to ensure for every citizen. Planning for the eradication of mass poverty could thus entail raising the standards of those sectors of the national society that are under the poverty line, so as to bring them somewhat above the poverty line. That may entail serveral things, for example: (a) it could provide increased employment opportunities, particularly in the rural areas through a systematic undertaking of labour-intensive rural public works activity and better tenural terms, both of which could increase the agricultural production; (b) it could undertake a more equitable distribution of land and other forms of national wealth as well as better distribution of income through, for example, the more equitable distribution of the benefits of the "green revolution"; (c) it might ensure increased public services particularly to the rural areas through the extension of services in the fields of agriculture, health, education, housing, etc., which will also tend to create more jobs; (d) it might generate increased production of basic consumption goods at reasonable prices through the undertaking of large-scale labour-intensive, agro-industrial production, which in turn will aslo generate more jobs and income with which to buy such goods; and finally (e) it could ensure more effective fiscal and tax measures, which may tend to pass on some of the income in the higher income brackets to the supply of goods and services to the lower income brackets.

Thus, in order to be realistic, there seems to be even a more urgent need for many countries in the region to define their mass poverty line and to collect more specific data on the extent and scope or quality of mass poverty. This is particularly important in as far as poverty, and its related factors, such as unemployment, disparities in wealth and income, and uneven distribution of services and developmental benefits, are a strongly anti-developmental factor that need to be squarely attacked through proper planning and more deliberative policies to ensure full success for unified development planning and to provide a better future.[4]

New and more dynamic system approaches to planning are being internationally developed, and much supportive research in the unified approach to development analysis and planning is going on. It is the objective of this paper, as a first step in this direction, to illustrate the interrelatedness of planning for various social factors for development that have to be taken into account in any serious effort towards unified development planning.

While the data requirements in the annexed list are therefore intended to be suggestions and of a general nature only, an attempt has been made to build in some specificity to emphasize planning for the alleviation of the major problem of mass poverty. This emphasis is justified by the lessons learned from actual performance during the First Development Decade, namely that the knowledge and proper direction of how the benefits of development are being shared among various segments of the population is crucial to the success of planning itself. This region will no doubt continue to suffer from many economic problems for a long time to come, but a more decisive and fateful factor will be its social problems, some of which are generated by the defects in the planning systems themselves. If not cured now, this malaise may lead to a future that will be very grim indeed.

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[4] Regarding the urgency of planning for the alleviation of mass poverty, see also : Report of the Conference of Asian Economic Planners (E/CN. 11/1009, December 1971), paras. 64, 65; and Report of the Expert Group on Progress Evaluation during the Second Development Decade (E/CN.11/L.318, January 1972) paras. 14, 16, 23 (g).

ANNEX

BASIC DATA REQUIREMENTS FOR UNIFIED DEVELOPMENT PLANNING AT THE NATIONAL LEVELS RELEVANT TO COUNTRIES OF THE ECAFE REGION*

A Conceptual Information System for Planning the Social Components of Development

I. GENERAL DATA

A. Financial

+ 1. Developmental and regular budgets
2. Foreign aid and foreign exchange
3. Public and private saving and investments
4. Capital flight
5. Waste of resources, including corruption

B. Capital goods

+ 1. Availability and location of productive capacity and under-utilization thereof
2. Imports
3. Infrastructure and communications

C. Manpower

+ 1. Availability and location of training and skills
+ 2. Under-utilization of manpower
3. Availability and skills of foreign experts and managers
4. Brain drain

D. Administrative capacity

1. Availability and location of administrative machinery
2. Training, skills and location of civil service, per government agency

Cross-ref.: all areas of programme planning

II. DEMOGRAPHIC DATA

1. Detailed population projections
+ 2. Spread of population, densities, growth rates per area and per group
+ 3. Migration and urbanization
4. Temporary population movements
+ 5. Extensive census data in as much detail as possible

Cross-ref.: All areas of programme planning

III. PRODUCTION DATA

+ 1. Investment per worker per sector (traditional/modern)
+ 2. Value added *per capita* per sector (traditional/modern)
3. Capital-output ratios per sector (traditional/modern)
+ 4. Comparative evaluation of capital-and labour-intensive methods of production; feasibility evaluations of large-scale labour-intensive rural public work programmes
+ 5. Detailed analysis of the agricultural situation and rural infrastructure.

Cross-ref.: I, II, IV, V, VI, IX, X, XI, XII, XIV, XV

IV. INCOME DISTRIBUTION

+ 1. Structure and distribution of wages and income per sector (traditional/modern)
+ 2. Distribution of income and resources per household on basis of socio-economic and geographical attributes
+ 3. Distribution and cost of services on basis of socio-economic and geographical attributes
+ 4. Structure of taxation and public expenditure
+ 5. Definition of urban and rural minimum standards of consumption of basic goods, and services (poverty line); identification and quantification of population below poverty line.
+ 6. Dependency ratio per income/wage earned

Cross-ref.: I, II, III, V, VI, VII, VIII, IX, XI, XII, XIII, XIV, XV

V. EMPLOYMENT AND MANPOWER

+ 1. Composition and growth projections of active labour force
+ 2. Definition of unemployment/underemployment
+ 3. Composition and growth projections of unemployed/underemployed labour force

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*The data required should preferably be available on annual basis for (a) the relevant past, (b) the present, (c) the future (projected on the basis of present performance, developments and trends) and be projected against (d) the planned targets. Moreover the data should relate to meaningful contexts, e.g. male/female; capital city/urban/rural; etc.

Legend : Roman numerals = basic planning areas
Capitals = subareas
Figures = suggested data
Cross ref. : = cross references to most immediately related planning areas.
+ = especially significant data in relation to mass poverty

+ 4. Comparative evaluation of sectors of production (traditional/modern) in terms of employment, contribution to national income, capacity of absorption of labour force, levels of income and social security

Cross-ref.: I, II, III, IV, VI, VII, IX, XI, XII, XIII, XV

VI. EDUCATION, SKILLS AND SOCIAL MOBILITY

A. Infants and B. Pre-schoolers

+ 1. Inventory and prevalence of child-rearing and nutritional habits
2. Distribution and consumption of creative toys
+ 3. Incidence and spread of adult literacy
+ 4. Access to basic health and family planning programmes

Cross-ref.: I, II, IV, V, VII, VIII, IX, XI

C. School-age children

1. Analysis of curriculum contents and exposure to teaching
+ 2. Evaluation of the qualities of school education and enrolments
3. Availability, quality and output of teachers and teaching materials

Cross-ref.: I, II, IV, V, VII, VIII, IX, XI

D. Adolescents

1. Classification of adolescents (age, in/out-of-school and university, educational background, vocational training)
+ 2. Employment situation
3. Participation in national services
4. Exposure to foreign cultural influences
5. Political interest and organization
+ 6. Educational opportunities and evaluation thereof
7. Analysis of unrest, demonstrations and agitation

Cross-ref.: I, II, III, IV, V, IX, XII, XIII, XV

E. Social mobility

1. Composition of secondary and tertiary student body in terms of male/female, father's profession, capital city/urban/rural and ethno-cultural origins

Cross-ref.: I, II, IV, XII, XIII, XIV, XV

VII. FAMILY

1. Family stability and continuity of basic informal educators
+ 2. Age at first marriage, age at first delivery, spacing of children, divorce, modern family planning
+ 3. Mortality among infants, pre-schoolers, etc., and women at child-birth
4. Practice of *de facto* polygamy and sexual ethics
+ 5. Composition and size of households

Cross-ref.: I, II, V, VI, VIII, IX, X, XI, XIII

VIII, HOUSING

1. Types of housing, construction materials, space allocations, their location and occupation densities. Evaluation of hygienic and sanitation standards and conditions.
+ 2. Definition of minimum standards for urban and rural housing
+ 3. Identification of population occupying substandard housing
+ 4. Definition of undesirable living habits and housing standards

Cross-ref.: I, II, IV, VI, VII, IX, X, XI, XIII, XIV

IX. HEALTH, NUTRITION AND WATER

+ 1. Coverage and quality of health services and medicine distribution
+ 2. Access to health services and medicines
+ 3. Cost of health services and medicines
4. Causes and incidence of morbidity and mortality
5. Prevalence and evaluation of traditional medicine
6. Effects on mental and physical health of developmental activities
+ 7. Food consumption patterns and evaluation of their quality and quantity
+ 8. Availability of good drinking water

Cross-ref.: III, IV, V, VII, X, XI, XIII, XIV, XV

X. ENVIRONMENT

A. Geographical

1. Problem- and territory-specific data

B. Social

+ 1. Problem- and population-specific data

Cross-ref.: I, II, X, and all areas of programme planning, especially III, IV, V, VII, VIII, IX, XI, XII, XIII, XIV

XI. SOCIAL WELFARE AND SECURITY

• 1. Classification and quantification of vulnerable groups and minorities, such as illiterates, school drop-outs, handicapped, unemployed, women, children, youth, aged, urban and rural poor, prisoners, ethnic minorities, hill tribes, etc.

• 2. Classification, quantification and coverage of traditional and modern income security and service systems

Cross-ref.: I, II, IV, V, VI, VII, VIII, IX, X, XI, XII, XIII, XIV, XV

XII. SOCIAL STABILITY

• 1. Incidence, kinds and causes of criminal behaviour

2. Incidence, kinds and causes of protests and strikes

• 3. Incidence, kinds and causes of rural unrest

4. Incidence, kinds and causes of revolutionary movements

Cross-ref.: I, II, and potentially all areas of programme planning

XIII. SATISFACTION AND HAPPINESS

• 1. Results of survey research that directly seeks to measure satisfaction, happiness, perspective of the future, frustration, and opinions of relevant groups within the population.

Cross-ref.: I, II, and potentially all areas of programme planning

XIV. COMMUNICATIONS

• 1. Area-specific data on the circulation of money, goods; air, land and water traffic; persons, mass media, books, mail, etc.

2. Area-specific data on the infrastructure of communications, e.g. roads, railroads, ports, airports, telephones, radio and television sets, broadcasting equipment.

3. Area-specific data on the use of mass media for development and evaluation thereof.

Cross-ref.: I, II, and all areas of programme planning

CAPACITY OF PLAN IMPLEMENTATION

XV. POPULAR PARTICIPATION

1. Judicious assessment of people's motives for co-operation or non-co-operation in development programmes

2. Assessment of awareness of national and developmental issues

3. Image of government and civil service

4. People's self-help initiatives and activities; people's *de facto* social ethos

Cross-ref.: I, II, and all areas of programme planning

XVI. GOVERNMENT ADMINISTRATIVE CAPACITY

1. Evaluation of strengths and weaknesses of government planning and executive apparatus

2. Assessment of adequacy of resources for development policy

3. Quality, tradition and orientation of civil service and its relationships with the people

4. Adequacy of civil service in terms of skills and numbers to implement development policy

5. Evaluation of government extension, propaganda and use of personnel and mass media

Cross-ref.: I, II, and all areas of programme planning